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THE CONTRIBUTION OF MEDICINE TO MODERN CIVILIZATION*

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FLINT, MICHIGAN

Three hundred years ago William Harvey announced his discovery of the circulation of the blood. Harvey hesitated fifteen years before he published his book of seventy-two pages. In chapter eight he says that he "fears not only injury to myself from the anger of a few, but I tremble lest I should have mankind at large for my enemy." At least twenty anatomists wrote against Harvey's discovery. Harvey also wrote, "the authority of Galen is of such weight with all, that I have seen several hesitate greatly with the experiments before them." It will be recalled that the books that have profoundly affected human thought have not been rushed to print. Francis Bacon waited twelve years, and Copernicus thirteen years. Both Newton and Darwin waited twenty years before publishing their works.

* Presidents annual address, Michigan State Medical Society, September 26th, 1928.

HARVEY'S GREAT CONTRIBUTION

Galen was the authority in medicine for over fourteen centuries, and of the twenty-two volumes that he wrote, sixteen volumes were on the pulse. Galen had said the blood ebbed and flowed like the tide. Disease, according to Galen, resulted from excess or deficiency of the humors. There were four humors: lymph, blood, yellow and black bile. There were three spirits: natural, vital and animal. The natural spirit rose from the blood which was formed in the liver. The blood at heart combined with the vital spirits which arose in the brain and was there transposed to animal spirits. Yet Galen came very near to discovering the circulation of the blood, as Harvey frequently calls attention to Galen's experiment of opening an artery between two ligatures and finding blood instead of air. We still carry in our words the old humoral theory in our

expression of temperaments as the sanguine or the joyous, the sad or melancholic, the excitable are choleraic and the slow are phlegmatic. Harvey, in his fear of personal injury to himself, could point to the treatment of Servetus by Calvin for his discovery of the lesser circulation of the blood.

William Harvey's discovery of the circulation of the blood was based on animal observations and experiments. In the background of this first medical scientific research was the influence of the anatomist, Vesalius, who discovered several mistakes of Galen, one of which was the hypothetic pores between the ventricles of the heart. Vesalius in sarcasm said, "we are driven to wonder at the handiwork of the Almighty by which the blood sweats from the right into the left ventricle through passages which escape the human vision." In the background of Harvey's discovery also were the innovations of Ambroise Pare in surgery, and Paracelsus in chemistry in attacking Galen's humoral theory of disease. Paracelsus' chief contribution was to employ chemicals as drugs, and who insisted that the aim of alchemy should be to cure the sick.

THE HUMORAL A MEDIEVAL THEORY

The humoral theory of disease explains the treatment during the middle ages and even up to fifty years ago by purging, by sweating, emesis, blood letting, blistering and elimination to rid a patient of disease.

Not only medicine, but various other sciences were dominated by authority. Pliny was still the authority in botany and Aristotle, the infallible court in philosophy and natural sciences. But Harvey, Galileo and Shakespeare were born almost the same year. Bacon, Shakespeare, Columbus and Copernicus were contemporaries. These men were to open up to mankind not only a new world, but an infinite universe. This is the beginning of a new age for man which we call modern civilization, made possible by modern science. As the Magna Charta is to liberty, so Harvey and his work is to modern medicine.

THE WORK OF SYDENHAM

No account of modern medicine is complete without a mention of Sydenham, the English Hippocrates. Sydenham re-introduced the Hippocratic method of bedside observation and dared to believe it possible to draw a complete picture or description of a disease which carries with it the possibility of a specific remedy. He said he knew of but one specific remedy for a disease and that was Jesuit's bark, which was then worth it's weight in gold. He distinguished scarlet fever from measles, wrote clear, plain descriptions of hysteria, chorea and gout. He was, however, still suffering from the old tradition when he said that small-pox was not a disease, but a condition which it was necessary to undergo in order to renovate the blood.

Medicine has not learned much from empiricism. Mercury for syphilis; cod-liver oil for rickets; ipecac for dysentery; digitalis for the heart, and quinine for malaria, being about the only contributions. Patients that were not treated by elimination were treated by the doctrine of signatures. According to this peculiar doctrine the Creator had placed signs on plants to indicate their uses. Yellow flowers, dandelion and saffron, were for jaundice, Adder's tongue for snake bite; walnuts being perfect signature of the head, were for wounds of the head; liver wort, because it resembled liver tissue, was designed for liver complaints; peonies for anemia, and the dull red buds of fig wort resembling scrofulous pimples, were naturally selected for scrofula if one could not get the king's touch. How much different the magic touch of the sun's rays to the king's touch for scrofula and rickets.

The shotgun prescription of the past has been succeeded by the rifle of the active principle of a drug. The Polypharmacy of the Egyptian and Arabian, consisting of from twenty to one hundred ingredients and the pseudo-religious medical and pharmaceutical hocus-pocus of the middle ages had been thrown into the discard. But it was not until the late fifties of the nineteenth century that the exact study of the action of drugs was attempted. Little wonder that Francis Bacon could say truly "that medicine of his time was a science which has been more professed than labored and yet more labored than advanced, the labor having in my judgment been rather in circles than in progression. For I find much iteration but small addition."

SO-CALLED SUPERNATURAL CAUSE

Disease to the savage is due to supernatural forces, a visitation or a punishment of the Gods, and relief is to be sought by prayers and supplications. And to the superstitious, disease is believed to be due to the work of the Devil. Even Martin Luther said, "Pestilence, fever, and other

severe diseases are none else than the works of the Devil."

Today medical science can assure the world that never again will it be visited by the great epidemics or pandemics like black plague which in the fourteenth century took a death toll in Europe of twenty-five millions, or of small-pox, which was responsible for the death of sixty millions in Europe in a century, when every tenth patient died and one fourth either died or were disfigured for life. Thomas MacCauley called small-pox the most terrible of the ministers of death. How true have come the words of Thomas Jefferson in a letter to Jenner: "Future nations will know by history only that the loathesome small-pox has existed and has been by you extirpated." Unfortunately, there is in the United States a spread of anti-vaccination propaganda in which are made the most absurd fabrications and misstatements. The evidence is overwhelming that Jenner's vaccination is effective and that immunity can now be safely conferred. There have been ten and one-half million vaccinations given by the army, navy, and public health officers without a single case of syphilis. This should be a complete final refutation of the alleged dangers of vaccination. The state of Pennsylvania has made vaccination compulsory and not a case of small-pox in a native has occurred in fourteen years. Fourteen large American cities reported last year 6,387 cases of smallpox with 1,298 deaths, which teaches us that no one can predict when a severe form of small-pox may replace the mild form.

THE UNSANITARY FACTOR

The water borne diseases: cholera, typhoid and dysentery, are now preventable diseases. Yet only fifteen years ago there were twenty-five thousand deaths and two hundred and fifty thousand cases of typhoid fever in the United States. During the Spanish-American war there were 107,973 enlisted men. One in every five contracted typhoid. In all there were over twenty thousand cases and 1,580 died. Contrast this with 4,000,000 enlisted in the Great War with 1,056 cases of typhoid fever and 156 deaths. This result may be credited to improved sanitation, but was largely due to Wright's bacterin (anti-typhoid) injections. By contrast, in the French army there were 125,000 cases of typhoid fever; in the German army 112,000; and in the Austrian army, 171,000 cases. Had typhoid fever not been preventable during the World War and the ratio of the Civil War had prevailed, there would have been in the American army 226,000 cases with 62,694 deaths. Typhoid fever did occur in sections of France where our troops operated. The American death rate was the lowest because our army had time to carry out thorough vaccination. The death rate of typhoid fever, a disease spread by contaminated water, milk and food, by flies and human caries, is altogether too high in the United States, contributed largely by some of our southern states. We note with pride that our own Victor Vaughan was the discoverer of the part played by the fly in carrying typhoid fever. The death rate is still eight times as high as in England and Wales. The Montreal epidemic of last year shows the dangers of a human carrier. This epidemic was traced to a foreman in a pasteurizing plant. In March and April (1927) 2,603 cases, with 233 deaths, were reported. No comment is necessary of the necessity of a bacteriological examination of those who handle human food if the public be not immunized against typhoid.

The mortality of diphtheria is absolutely dependent on the length of time that has elapsed before anti-toxin is administered. When anti-toxin is given within the first day, only 1 per cent die, while the mortality is 5 per cent if given the second day—7 per cent for the third and 8 per cent and up on the fourth day. The tremendous reduction of mortality from pre-anti-toxin days of over 30 per cent, to 1 per cent if given early, is one of the marvels of modern times. The city of Auburn has shown what can be accomplished by an intensive campaign. The city of Auburn has had just two deaths from diphtheria in nearly four years. In neither case had the patient been immunized. The Shick test has been found to be a reliable guide to those who are susceptible to this infection and through immunization, by toxin and antitoxin it is not unreasonable to predict that diphtheria can be entirely eliminated, as several cities have demonstrated.

The same success has been attained in scarlet fever. Doctors Dick and Dick took personal charge of the immunization of patients at the Michigan Home and Training School at Lapeer, Michigan, and there have been no cases except in those who are newly arrived and in cases of attendants who have not been immunized. The significance of this work is realized when we recall that scarlet fever ranks fourth in mortality from infectious diseases.

HEALTH AND PROGRESS

That medical progress has a bearing on civilization we may note that the control of hookworm and pellagra is making a new south which failed to come back after the Civil War. Good health is as necessary for a nation as for an individual, if they are to progress and make a strong, happy people.

It is said that yellow fever is the first disease to be completely eradicated by scientific methods. Of this we are proud because its elimination was an American contribution and the Rockefeller Foundation has dedicated itself to the task of eliminating yellow fever from the whole world. There have been no deaths in the United States for several years, whereas it formerly was the cause of the death of thousands. The role of the mosquitoes in yellow fever and malaria is established. There are 800 different mosquitoes, but the stegomyia and the anopholes have been condemned as the arch criminals and the male sex can get what satisfaction they may out of the fact that it is only the female mosquitoes that are the culprits, the male being a vegetarian. Finlay was correct in his reasoning that where there is yellow fever, there you can find stegomyia. Where there are no stegomyia, there is no yellow fever. That malaria is disappearing is true and the problem is merely one of destroying the mosquitoes, as has been demonstrated by Gorgas in the building of the Panama Canal and cleaning up of Havana. Five millions of cases were reported in Russia in 1923. Perhaps in time it may be necessary to ship in mosquitoes infected with malaria into the United States to supply the treatment of paretic dementia for pareses has been arrested by infection with malaria and then eliminating the malaria by intensive treatment.

THE FIGHT AGAINST TUBERCULOSIS

Deaths from tuberculosis have been reduced 50 per cent since 1907. Nine millions are doomed in the United States to die of tuberculosis unless the disease is checked. Tuberculosis has already become a class disease. It is largely a disease of the poor and is an economic or sociologic problem. Over 1,000,000 cattle have been slaughtered to prevent bovine tuberculosis in children. Gland tuberculosis is not so frequent as formerly and its treatment is no longer surgical. Pasteurization of milk and a clean milk supply has been urged and the fight has been carried on by the medical profession. There is hope that the recent experiences with the Calmette antituberculosis vaccine in Paris and the provinces may prove to be the solution of the prevention of tuberculosis. The figures are encouraging. Nearly 4,000 infants born of tuberculous mothers or in homes with one or more cases of tuberculosis, the mortality was less than 1 per cent—while those similarly exposed but not vaccinated, the mortality ranged 25 to 80 per cent. For comparison, Denmark had the lowest mortality of children under 1 year of life and their mortality was 7.7 per cent. The children in Paris itself who have been vaccinated and who have now reached ages from 2 to 3½ years, the mortality has been nil. These results are most encouraging.

The ravages of syphilis are little suspected by the public. Syphilis affects at least 5 per cent of our total population. There are 300,000 insane in our asylums and one-eighth of these, or about 37,000, are cases of general paresis. It may be noted in passing that syphilis is now more prevalent among uncivilized than civilized nations. Paul Ehlich and his staff brought forth a specific remedy for syphilis. This work is said to have cost ten millions of dollars, a small amount to pay for a specific remedy for a disease.

The number of drugs for a disease is in direct proportion to our ignorance as is evidenced in the fact that there are 50,000 drug items listed that are supposed to be a weapon against the common cold. The unconquered scourges of the human race are influenza, which caused ten millions of deaths in the last epidemic. Pneumonia, which causes 10 per cent of all deaths in the United States. Late cancer and rheumatism should be added to this list. Just think what could be done if there were a specific remedy for acute rheumatic fever and for septicaemia. Think of the diseases of the heart that could be prevented which is now the leading cause of deaths in this country, causing 14 per cent of deaths at all ages and 23 per cent at the age of 40 or over. Here are fields of research that are the most inviting and urgent in the field of medicine.

AID OF COLLATERAL SCIENCES

Medicine could not have made such progress had it not been for the valuable discoveries and researches of the chemists and the pharmacologists. The chemist took, for instance, cocaine consisting of 43 atoms and after determining which group of atoms produced local anaesthesia, he proceeded to build up new compounds hav-

ing greater pain-destroying qualities and eliminating from the group those having toxic effects. The works of Abel and of John Hopkins in producing adrenalin synthetically is another of the marvelous achievements. Kendall, of the Mayo clinic, did the same with thyro-toxin. Here are examples of the production of the active principles of the internal secretions. The accomplishments of Banting and MacCleod with insulin in diabetis, and of Minot and Murphy with liver in pernicious anemia, illustrate the necessity of the safeguarding of our research workers and animal experiments. Medical research workers are slowly but surely solving medical problems that will relieve humanity of pain and disease. The refinement in the production of Chalmaugroo oil has resulted in the cure of leprosy and is the answer to the century-old cry, "thou can'st make us clean." The research worker and the chemist will in time learn to make artificially the pure principles of the anti-toxins, thus eliminating serum sickness. Animal experimentation is the keystone of medical progress and without new knowledge acquired in the laboratory, medical progress is absolutely blocked.

We are the heirs of the knowledge gathered by painstaking investigators who have not received the applause of the world or the rewards of the warrior, but whose gifts to mankind have resulted in the saving of lives, restoring the lost, rehabilitating the soldier and the crippled child and making the world a happier and safer world in which to live.

When the corn borer threatened to destroy a great staple crop, Congress lost no time in appropriating $10,000,000 to stop the devastation. Hogs and cows have received consideration from the national treasury, but $40,000 was considered sufficient for chemical research that might benefit humanity. Man, it seems, was expected to shift for himself.

By medical knowledge it has been possible to clear up the tropics, "the white man's grave," to prevent the spread of the great epidemics, medical men have fought the battles for pure food laws, taught the value of sunlight and fresh air, and of sanitary water supplies, has taught the dangers of the flies, the louse, and the rats, has changed the thought of the world that the end of life was not to mortify the flesh but rather to recognize the human body as God's temple.

PROGRESS IN DIAGNOSTIC METHODS

The study of the human body—the comparison of symptoms with the findings on the post-mortem table, beginning with Morgagni and added to by Laernec and by thousands of records, has resulted in an exactitude of diagnosis. The X-ray, the stethoscope, the electric cardiograph, the microscopic study of tissues, chemicals and bacteriologic test in the laboratory, the ophthalmoscope, cystoscope and the study of functions of the various organs of the body, has enlarged the faculties of the modern doctor. Not so many years ago he could tell nothing about a patient except what he saw or felt with his unaided five senses. Diagnosis and treatment are no longer guesswork.

The American people believe in the modern hospital. Since 1923 five billion dollars have been invested which requires daily an expenditure of three millions of dollars. One million of men and women are engaged in caring for the sick and in promoting health and the prevention of disease under the guidance of approximately 150,000 physicians and surgeons. The modern hospital represents the acme of conveniences for the study of patients and for the complete examination and for the application of proper remedies, as the result of the various studies and examinations.

MEASURED IN HAPPINESS

The achievement of medicine and its contributions to modern civilization suffers not in comparison with other professions or with those of the various sciences in adding to human life in its service to humanity. The medical profession believes that life is worth living, and that without health and strength and happiness, life is only a thrice told tale. Osler says, "To those of the medical profession who measure progress by the law of greatest happiness to the greatest number—the leaves of the tree of science have been for the healing of the nations. Measure as we may, the progress of the world. Materially in the advantages of steam, electricity and other mechanical appliances, sociologically in the great improvement in the conditions of life; intellectually in the diffusion of education; morally in the possibly higher standard of ethics—there is no one measure which can compare with the decrease of physical suffering in man, woman and child when stricken by disease or accident. This is the one fact of supreme personal import to every one of us. This is the Promethean gift to man."

The miracles of the Bible times are the commonplace facts of today. "The eyes of the blind are opened"—"The halt and the lame walk"—"The withered hand is healed"—"The palsied take up their bed and walk," and modern civilization would be impossible without the aid of modern medicine. Modern rapid transportation would in a few days spread the great epidemics from one end of the world to the other. In fact, civilization can be measured by the statistics of public health and the vitality of its people. Millions of children annually are saved from death. The crippled and handicapped boy and girl is relieved of deformities to make them self-sustaining and self-respecting. The surgeon annually saves thousands of fathers and mothers and the family ties remain unbroken. Thousands of mothers are saved as they go through the valley to perpetuate the race. Puerperal sepsis is now practically unknown, whereas hospitals formerly had to close when the maternal death rate mounted beyond 50 per cent. Asepsis and anti-sepsis surgery save annually more lives than were lost in the Great War. We no longer hear the expression, "a bold surgeon," because all over the world surgeons are operating not only on the extremities, but in the abdomen, chest, brain, and spinal cords. Pasteur and Lister were the greatest benefactors of the human race that ever lived, and made possible the relief of suffering and the prolonging of the human life. "Health, public health, individual health and satisfaction are the cornerstones of a successful and fortunate civilization," says Nicholas Murray Butler. "Without these everything is imperfect or impossible. With them everything is possible. The family is more thoroughly protected today from physical ills than ever before. The span of human life has been increased about six years in the past fifteen years. The medical profession says it is not enough that such be treated skillfully, the well must be urged to preserve their own health."

HEALTH AN ECCONOMIC ASSET

In war the state is vitally interested in the health of its army of defenders. So in peace the state is also vitally interested in the health of its people. The welfare of society is hindered by ill health, by physical defects and deformities and lack of efficiency, whether physical or mental, of its members. The members of society who consume more than they produce and who take out of society more than they put in, are a drag upon public welfare. The dependents of society, the wards of state institutions, while alive, should be humanely treated, but society requires that they produce no more of their kind for future generations to support. So the state is vitally interested in medical progress to prevent illness, to correct handicaps when present, and to make each of its members as near self-supporting as possible.

Modern civilization has lessened the burdens of toil by labor saving and time saving machinery and knowledge is more rapidly transmitted. The toiler of today has conveniences and comforts unknown and undreamed by princes and through medical science by sanitation, hygiene, specific cures, modern aseptic surgery and increasing knowledge of the human body in health and disease, has made for the present generation the beginning of the millenium on earth. The goal and ideal of all medicine is the time when all diseases that afflict mankind may be prevented and then earth will be Heaven.

It was Cicero who said long ago "that man comes nearer to the Divine when he brings back health to the suffering than at any time or in any way."

The medical profession is proud of its achievements. Modern medicine has received its contribution from citizens of all nations. For England gave us John Hunter, Addison, Bright and Lord Lister; Germany gave us Virchow, Koch and Ehrlich; France gave us Laennec, Louis, Bretonneau, Laveran and Pasteur; Poland gave us Madame Curie; Russia gave us Pavlow; Japan gave us Noguchi, Yersin and Shiga; Switzerland gave us Kocker; Ireland gave us Corrigan, Stokes and Graves; Spain gave us Cajal; Canada gave us Osler, Banting and McLeod; and America gave us Long and Morton, Ephriam McDowell, Carrol, Lazear, Holmes, Crile and the Mayos and Beaumont.

We glory in the service that medicine has been to humanity, and we pay our humble tribute to those great medical heroes who in pursuit of knowledge have laid their all on the altar that suffering and pain might be abolished.

We predict that the coming years will slowly but surely add to the forces in the prevention and conquest of disease for even "greater than the greatest discovery is to keep the way open for future discoveries."

MALIGNANT DISEASE—A SURVEY*

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Two investigations of cancer mortality in the United States (one by the Metropolitan Life Insurance Company, and the other by the United States Public Health Service, for the general population of the registration areas of the United States) would seem to indicate that cancer as a cause of death is increasing. The evidence of these two reports is counterbalanced by the fact that—as H. Gideon Wells of the University of Chicago, states—"the increase in the cancer rate is just about the same as the increase in the other three common causes of death in those who have passed the prime of life—cerebral hemorrhage, nephritis and heart disease." While there are a number of factors responsible for the apparent increase in cancer mortality—more autopsies, better methods of diagnosis, more accurate certification of causes of death, etc.—the increased duration of life probably is by far the most important factor in the equation. In the 120 years from 1800 to 1920 there has been in the United States a gain of 25 years in the expectation of life. It is also true that in the last two decades, from 1900 to 1920, there is shown a relatively greater gain than for the earlier periods. Therefore, in summing up the evidence, pro and con, as to the increase in cancer mortality, one may draw the conclusion that while there is an apparent increase, the real increase, if present at all, is exceedingly small.

ETIOLOGY

Conjectures there are in plenty to account for cancer causation. Dr. Peyton Rous, some fourteen years ago, demonstrated that chicken sarcoma could be crushed and filtered through a tube and yet the filtrate was capable of exciting a new growth of the same type as the original when inoculated into another fowl. No causative agent in this phenomenon was ever found.

Dr. W. A. Gye and Mr. J. C. Barnard began about four years ago to carry on the investigations into chicken sarcoma at the point where Rous left off. The results of their work was published in the Lancet, July 18, 1925. Gye claims to have been able to isolate the organism from chicken sarcoma with the invaluable aid of the microscope designed by Barnard. The active agent, or virus, by itself, cannot bring about malignant growth. For this purpose a specific substance injected alone has not produced the tumor, but the combination of the virus and the specific subject did produce cancer. The specific substance is believed by Gye to be of chemical origin, tar, soot, paraffin oil and irritants of a like nature. It is suggested that the "virus" is ubiquitous and ready to invade when suitable conditions present themselves. It has also been stated that Dr. Gye has discovered a means of successful immunization against cancer.

There are several points in the parasitic theory of cancer as set forth by Dr. Gye which are obscure. Is the so-called "virus" really an organism? It is necessary also to demonstrate that when the specific substance is separated and treated with chloroform it is absolutely free from cancer cells. Most important of all, it is yet to be demonstrated that what has been done with chicken sarcoma can also be accomplished with mammalian carcinoma. The chemical nature of the specific substance must be sought. Dr. A. J. A. Carrel of the Rockefeller Institute (N. Y. City) has concluded as a result of his investigations into the Rous chicken sarcoma that two factors are necessary for the production of malignant disease; (1) a focus of active cell multiplication. (2) a non-specific chemical substance, such as tar, arsenic, certain substances produced by bacteria, or tissues injured by X-ray, etc. When one of the latter, or a substitute, resulting from its action on the tissues, finds itself in contact with body cells in the process of active proliferation the cells become sick and manufacture a substance similar to the filterable agent of the Rous chicken sarcoma. Carrel believes it possible that toxic substances in normal serum may act on the cells of an area of chronic inflammation in the same way that tar injected into the blood stream may act on a benign chicken teratoma. Carrel's hypothesis is that of a tumor arising from the action of a non-specific chemical substance on an area of active cell proliferation.

Dr. John Nuzum of Chicago, a few years ago, announced the discovery of a micrococcus which he suggested was the cause of cancer. Recently, he has published a description of his investigations. He isolated the micrococcus from human breast cancer and by injecting the organ-

* Read before the Wayne County Medical Society and the Alumni Association of the Detroit College of Medicine and Surgery—a part of the Post-Graduate Educational Program of the Michigan State Medical Society and the Department of Post-Graduate Medicine, University of Michigan, May 14-17, 1928.

ism into mice, claims to have produced typical carcinoma. The same results were obtained by Dr. Nuzum from a like inoculation into a human being. He concludes that the micro-organism is regularly present in human breast cancer and is transplantable in the mouse.

Dr. Glover of New York, formerly of Toronto, Canada, a few years ago, declared that he had isolated an organism which fulfilled all the requirements of the Koch postulates and that its inoculation would reproduce cancer at will. This claim was not accepted by the profession at large, but the research was continued by Glover and other investigators and according to these, the micro-organism isolated is polymorphic, appearing as bacillus, micrococcus or spore sac. They state that they have found this parasite in every carcinoma examined and can reproduce the growth in all animals in which it is inoculated; recover the organism from this growth, and complete the cycle indefinitely.

Dr. James Young of Edinburgh asserts that in his opinion there are two factors which change a normal cell into a cancer cell: An antecedent cell susceptibility and an immediate cancerogenic factor, and that he almost constantly obtains from cancer an organism with a complete life history. It possesses amorphous and polymorphous phases, each of which grows true to type and lives a wholly independent life. He believes that the parasite belongs to familiar bacteria, widespread in nature, and the ease with which cancer can be produced in animals by irritation implies immediate risk of infection by ubiquitous organism. Young holds that, from a description of Glover's organism, it is identical with the one he has isolated in its essential features. His theory, which is antagonistic to traditional views, he explains by attributing to bacteria the faculty of variation. Young thinks that the investigations of Lohnis of the Bureau of Plant Industry (Washington, D. C.), makes it reasonable to presume that all bacteria have a filterable form of life and that this may even be the essential parasitic form of all bacteria. He believes that the filterable forms said to have been discovered by Nuzum and Gye will probably prove to be fragments of a complex organism, as are also the bacilli of Ford-Robertson and Blumenthal.

Professor Blumenthal, of the Berlin Institute of Cancer Research, claims to have succeeded in producing cancer-like tumors in rats and mice by means of bacilli obtained from fragments of human cancer after liquefaction by the agency of burning glass. He suggests that these bacilli—which appeared as droplets after liquefaction—carry a "virus", and it is the "virus" and not the bacilli which causes cancer. Blumenthal also states that he has stimulated a growth of rat cancer by lymph taken from human cancer, so that he, apparently, does not agree with Gye that specific substances are necessary for the production of cancer.

Bilroth claims that without previous chronic irritation cancer does not exist, and among research workers there is practically universal agreement that localized chronic irritation is mainly responsible for the production of the precancerous cell. Of late years, it seems to be pretty generally accepted that the cell change is not dependent upon the class of irritation. Practically any type may excite malignancy, if long continued.

In discussing the etiology of cancer and the various theories to account for it, it is necessary to include the research which has been done to discover precancerous conditions. In King's College laboratory, London, Dr. Shaw Mackenzie has been experimenting for many months to ascertain whether there is any distinct difference between the blood of cancerous and non-cancerous subjects, and whether the blood of cancerous patients can be so modified as to increase their resistance to disease. Shaw Mackenzie has made use of the lipolytic action of the blood as a means of diagnosing the presence of cancer, a normal reaction strongly suggesting its absence. He claims to have had success along these lines. The Westminster Hospital Research committee, England, has made a careful study of this method for the predetermination of cancer and reports that "a positive result is absolutely valueless, for it is given by a certain percentage of normal, healthy individuals, and by various other conditions than cancer, some of them prone to manifest themselves at the 'cancer age'—such as nephritis and late syphilis. A negative reaction is, possibly, in a fairly large percentage of cases, evidence against cancer."

The investigations of Doctors Loeb, Maude Slye at Chicago, and Lynch at the Rockefeller Institute, and other workers in various laboratories, have amply demonstrated that animals can be bred with a very high or a very low incidence of cancer, but that the inheritance is on Mendelian lines, as Dr. Slye claims, is not gener-

ally admitted. Thus, to date, all of the theories advanced to account for cancer—constitutional, parasitic, or strictly cellular—are entirely inadequate. That cancer is a process of malignant cell proliferation is evident, but what causes this proliferation—the basic etiology of cancer—is absolutely unknown.

Some years ago, the present writer called attention to the fact that cancer may be of far more multiplex pathology (of more strictly defined variations) than our present classical pathological differentiations would seem to indicate, but whether the complex variations exhibited by tumors of the so-called same pathology are centered in the neoplasm itself, or in a chemical or other reaction in the host, is a matter of mere surmise. As medical science advances, it may be possible to demonstrate why neoplasms of the same pathological structure—the same cellular formation under the microscope—show such clinical variations; such degrees of virulence in different individuals. If all the types of cancer which we are able to classify are parts of the same disease, may there not be other potent factors, unknown to science, underlying the malignant process within the host? In summing up the evidence relative to the various factors held responsible for cancer causation, there can be but one conclusion—there is no convincing proof that the etiology has been solved.

While England and Germany are interested in cancer from the pure research point of view and France is concentrating upon radiation and other methods of treatment, America is emphasizing the education of the laity as one of the first principles of prevention. There must always be the two extreme viewpoints in regard to educational campaigns for the general public. Campaigns which stir fear and emotional distress are to be discouraged. There can be a well balanced middle ground. The public, for example, may be taught that prolonged irritation at any site of the body is conducive to malignancy; that any abnormal symptom requires the immediate attention of a physician, and that periodic health examinations are the most certain means of ascertaining any deviation from the normal in the individual. Descriptions of possible precancerous conditions, and definite information concerning the success which, practically, always attends the adequate removal of early carcinoma are types of legitimate propaganda which may be circulated freely among the laity.

The present status of biotherapy, as applied to cancer, is difficult to define. The results secured from the employment of bacteria, micro-organisms, in general, or the use of sera, are contradictory in the extreme. Many cures from various sera have been reported, but these are counterbalanced by the great number of negative returns. The Immunity Process, as demonstrated by the Middlesex Hospital, London, is one of the most interesting, but it is still in the experimental stage. Briefly, the experiments have been undertaken to prove that if growing tumor cells are given a lethal dose of X-rays, they do not grow when inoculated into normally susceptible animals, or that recurrence in such animals is arrested following removal of the primary growth, a lethal dosage of X-rays applied to the growth removed and the reimplantation in the original host. The cumulative data regarding these experiments is interesting, but conclusive evidence that the treatment will produce cancer immunity is still lacking.

Injections of colloidal metals—lead, copper, gold, etc.—have come to the fore recently in the treatment of malignant disease. The most impressive of these experiments are being carried on by Dr. Blair Bell of Liverpool, England, who does not believe in one specific cause of cancer, but holds that the disease has a multitude of causes, associated with one common factor. He regards malignant neoplasia as biological atavism, and in his opinion whatever factor, whether metabolic or extrinsic, can permanently injure the cell, without killing it, may be looked upon as a predisposing cause or exciting factor of malignant development. The lead treatment is in accordance with this view and is based on the fact that this metal has a special lethal action upon cells of cancerous growth, as of chorionic epithelium, or normal embryonic growth and mature cells rich in phosphatides. Professor Bell claims to have had considerable success in advanced cases of cancer, with this mode of treatment. In commenting on the lead treatment for malignancy, the British Empire Cancer Campaign Committee (Annual Report, 1927) says: "In post-mortem examinations of eight cases of cancer which died during treatment by colloidal lead preparations, no evidence was found suggesting any destructive change in the cancerous tissue or any arrest of the process, but some vital organs had suffered damage. In all cases the kidneys showed extensive

tubular degeneration. Focal necrosis of the liver with advanced fatty changes was a common finding." The report adds: "The treatment of cancer by means of colloidal lead according to the method of Professor Bell is being investigated whenever suitable cases are admitted to the hospital. (Christie Hospital, Manchester, England). The number of cases treated so far is not sufficient to show any definite results, but the investigation is being continued."

In analyzing the results of radium and X-ray in the treatment of malignancy, even after the many years these methods have been in use, it is not easy to make definite statements. Opinions on the subject vary widely among the profession. It is, perhaps, safest to say that the value of X-ray or radium treatment is limited and that the best results are obtained in conjunction with surgery in suitable cases, or as post-operative treatment in cases which appear to lend themselves to radiation. Diathermy—or, as it is now termed, electro-coagulation, seems to give some measure of success in certain types of cases. Dr. Howard Kelly uses the Clarke method of electric coagulation combined with the cutting needle of Dr. Wyeth in the treatment of superficial malignant growths and claims that the method is satisfactory. Dr. W. D. McFee uses electro-coagulation in the treatment of external or accessible cancer and also in treating deep-seated growths after they have been exposed by ordinary surgical procedure. Others have reported successes with other types of electrical treatments. The Percy Cautery is a development of electric therapeutics of which earlier forms were the cauterization of Byrne and the electro-coagulation of Doyen.

The De Keating Hart Method, which essentially, was first described by Riviere of Paris, was tested by the present writer on 235 cases from 1911 to 1917. After the World War, those cases which could be traced were analyzed and the summary indicated that:

1. In small superficial growths there was improvement—fully as good results as were obtained from radium or X-ray.

2. When the Dr. Keating Hart Method was employed following surgical removal of the gross lesion, the results were, in many cases, remarkable. Whether the radical surgery, an essential part of the method, was responsible for the result, or whether the fulgurating spark was the accountable agent, is still a debatable matter. The evidence would tend to prove, however, that surgery was the significant factor.

3. Following fulguration, the profuse, serous discharge from the fulgurated surface may prove an added element of aid to rid the host of all the diseased surface-cells.

4. Destructive fulguration—pseudo fulguration—is electro coagulation from an ordinary high frequency spark. This burns down the growth, but distant malignant cells, not destroyed by the heat, may be stimulated by it and thus local benefit, due to the destruction, may be counter-balanced by the stimulation.

Radiation, or surgery, as applied to malignancy of the breast and of the uterus, has called forth a great deal of controversial opinion in the professional world. The British Ministry of Health, 1927, made an extensive report on the results of treatments—radiation and surgery—in malignancy of the breast. The report covered a very great number of cases which were collected from many hospitals in England. Statistics quoted from this report show that in breast malignancy, following the modern complete operation, 52 per cent of cases are alive and well after a three-year period; 39 after five years, and 30 per cent after ten years. These statistics relate to patients who were in various stages of the disease. When results were tabulated according to the stage of the disease—before the disease had extended beyond the breast itself—91 per cent were well at the end of five years and 87 per cent at the end of ten years.

In cancer of the uterus, the radiologists claim that the mortality is very high following surgical procedure. The surgeons are equally emphatic in pointing out the poor results obtained by radiation in uterine malignancy. For example, Reguad, Beuthrer and Horsdihe state that radium treatment effects a cure in from 15 to 20 per cent of cancer of the cervix. Faure, of Paris, with thirty years of most successful gynecologic practice behind him, states that he has had but one case of definite recovery (in uterine cancer) with radium. In regard to surgery, Faure feels that the cures of uterine cancer may reach as high as 80 or 90 per cent, if operation is performed while the uterus is still mobile.

In a collective review of gynecologic literature of 1926, the editors of the American Journal of Obstetrics and Gynecology, September, 1927, state their reactions to the statistical evidence offered, pro and

con, concerning surgical or radiation treatment in malignancy of the uterus, thus: "We are of the opinion that operation is more sound and is the method of choice to be employed in properly selected cases. In spite of the inspired statistics of radium therapy and the ambitions of the roentgenologists, the death rate remains without appreciable change." Early diagnosis, technical facility in thoroughly excising the growth and probable channels of future recurrence and, in some cases, post-operative radiation are, at present, the most practical methods applicable to uterine carcinoma.

In summing up the present status of the cancer situation as it appears in January, 1928, briefly, there is little which is new and at the same time of real importance in the field of malignancy. The recent conference on cancer, held in America, and known as the Mohonk Conference, brought to light nothing new regarding cancer, although some interesting papers were presented and much data accumulated.

In 1915, the present writer published a summary of facts regarding cancer. Today, after but slight revision, these are as basically true as when first printed. Thus, it is apparent—

That, while there is some evidence which suggests that heredity may be one of the remote factors determining the susceptibility, or resistance to cancer, the congenital acquirement of cancer remains unproved. Recent research which claims that predisposition or resistance to malignancy is based largely on the blood group to which the individual belongs, is a fertile but an unworked field of investigation.

That the contagiousness or infectiveness of cancer is highly improbable, and in the case of cancer patients with external manifestations—ulceration or discharge—one needs to take only the same precautionary measures as would be adopted in the care of any open septic wound.

That, notwithstanding the possibility of underlying general factors, cancer may be regarded as local in its beginning and may be so thoroughly removed in its incipiency that the chances in favor of its non-recurrence are excellent.

That, when once cancer has advanced beyond the stage of cure, suffering in many cases may be palliated and life prolonged, by surgical and, possibly, other means.

That, while other methods of treatment may, in some cases, offer hope for the cancer victim, surgery for the great majority of operable cases affords the surest cure.

That, there is strong evidence to show that cancer can be diminished by the eradication of such predisposing factors in its production as: general lowered nutrition, chronic acidosis, chronic inflammation and irritation, and repeated acute trauma, cicatricial tissue (lupus, scars, burns, etc.), benign tumors, warts, moles, birthmarks, etc., abnormal discharges, particularly if blood-stained. Such occupations as working in pitch, tar, paraffin, analin, soot, and with X-rays or radium, if not safeguarded, are conducive to the production of cancer.

That, while there is some evidence of an apparent statistical increase in cancer mortality, such evidence is inconclusive and does not justify cause for undue alarm.

That, it would promote health results if each person would submit to a periodic physical examination.

While in a review of the present status of the cancer situation it is necessary to take cognizance of the important phases of research—in etiology, prevention and treatment (biotherapy, radiology and surgery)—there has been no vitally important discovery concerning cancer, within a decade, which has changed the aspects of the problem as known to the modern scientific world. New theories (discussed in the above text) relating to the etiology of cancer have been presented. None has been substantiated. New forms of treatment have been indicated—particularly along the line of biotherapy, but there is no conclusive proof that any one of these will predetermine, prevent, or cure cancer. Radiologists have worked out new methods of technique for the application of radium and X-ray in the treatment of malignancy, but there is no concensus of scientific opinion on the relative value of X-ray, or radium, versus surgery in cancer. Statistics vary according to the viewpoint of the writer. However, in the two sites of malignancy most frequently rayed—the breast and the uterus—the collective evidence (as quoted above) plainly indicates the superiority of surgery over radiation and what is true of these areas, doubtless, is true of other accessible areas of the human body. Superficial growths and post-operative lesions may yield to radium and X-ray, but in deep-seated malignancy the method of choice is surgery—early and adequate surgery—and perfected surgery is the surest means known today of reducing the mortality from cancer.

HYPERTENSION*

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In this paper an attempt will be made to present a few of the salient features of hypertension. The study of hypertension is of very recent origin. Osler in his 1901 edition makes no mention of hypertension as such. He mentions that in arterio-sclerosis an increased tension is to be expected. This he estimates with the fingers.

The etiology of hypertension is still in dispute. American observers classify hypertension into toxic, cardiac, renal and arterial types. Certain of the French school deny this and state that hypertension is due to over activity of the adrenal glands and that the pathologic changes found in liver, heart, kidney and blood vessels are the result of the high blood pressure and not the cause of it. Hypertension is also found associated with various infections and toxemias.

For clinical purposes we must have some kind of classification. That of Martinet is here followed. He divides hypertension into plethoric, angiospastic, nephritic and arterio sclerotic types.

PLETHORIC TYPE

The term plethora applies to a very clear cut and frequent clinical state. The plethoric subject is not an ill person in the accepted sense of the word. He may have occasional slight indispositions such as skin rashes and hemorrhoids. He consumes large amounts of food, his digestion is perfect. He possesses abundant vitality. He takes in large quantities of fluid and so is polyuric. He has a ruddy complexion and seems to be in robust health. Without being obese he is distinctly over weight. He has great endurance, is superactive and does a prodigious amount ofwork.

Thus we may say that the plethoric individual without being at all ill is supernormal, a superman from the physiologic standpoint. The heart is unusually powerful and usually is hypertrophied. This is reflected in a heightened pulse pressure. The kidneys eliminate increased amounts of water, salts, urea, uric acid, etc. The digestive glands, overly supplied with blood are over active in their secretion, with resulting polyphagia, polydipsia, polyuria, plethora, etc. This is indeed the hypertension of the well fed, a hypertension deluxe.

Right here may be quoted an extract from George Cheyne. "Every wise man after fifty ought to begin and lessen at least the quantity of his ailment, and if he would continue free from great and dangerous distempers and preserve his senses and faculties clear to the last, he ought every seven years go on abating gradually and sensibly and at last descend out of life as he ascended into it, even into a child's diet." In other words—We eat too much after forty.

Our plethoric subject is a candidate for obesity, diabetes and gout. He lays himself open to all of the cardio-renal disorders. He probably already shows many pathologic changes in the cardio-vascular system. In these cases we may discover by urinalysis and syphynomanometer early changes and thus by early discovery we may rectify them with much greater certainty.

ANGIOSPASTIC TYPE

This stage frequently is intermediate between the simple plethora and the cardio-renal stage. In other words it is the stage of pre-sclerosis. This stage usually occurs 5 years after the onset. The irremediable stage of sclerosis comes 10 to 15 years after the onset. This stage is characterized by an absolute instability or variability in all its phases—pulse rate, systolic and pulse pressures, viscosity and urinary output. This is not met with in either the plethoric stage—normal from the circulatory standpoint—nor in the subsequent stage where pathological changes have already taken place. In the first stage compensation is acquired by a general and regular functional hypertrophy. In the sclerotic stage the organism moves along for better or worse with permanent lesions constituting a permanent infirmity.

But in the angio spastic stage the organism not yet permanently altered, is not resigned to its fate. By compensatory hypertrophy it tries to stave off an approaching collapse. Sudden attacks of myocardial weakness, angina, edema, etc., are significant of this stage. High tension and cardiac protests against renal and peripheral back pressure are the last cry before the onset of incurable sclerosis.

NEPHRITIS

The marked influence of nephritis in causing high blood pressure has long been known. It makes no difference whether the nephritis is acute or chronic, of infectious or toxic origin. In this class also may be placed the high tensions of gout, lead poisoning, scarlet fever, diphtheria, typhoid, etc.

* Read at the thirty-first annual meeting of the Upper Peninsula Medical Society at Newbury, Michigan, August first and second, 1928.

ARTERIOSCLEROSIS

Plethora, angiospasm, and infection, whether they cause preliminary renal changes or not, and whether they are present alone or in combination, inevitably induce degeneration of the arterial coats and so produce arterio-sclerosis or arterio-renal sclerosis. Here continuous elevation of blood pressure is the rule although the old rule, high blood pressure = arterio-sclerosis is not manifestly true. Here we find evidences of peripheral sclerosis, chronic aortitis, cardiac hypertrophy and interstitial nephritis.

TREATMENT

High blood pressure is not a disease but a symptom of many diseases of different pathology. High blood pressure being compensatory there is no medicine to lower it unless it is in itself dangerous. Thus there is no specific for high blood pressure, and even no single treatment for it. In general it may be stated that there is a certain low limit of high blood pressure beyond which the systolic pressure may be lowered only by upsetting the cardio-vascular balance to the detriment of the myo-cardium and transforming the case from one of compensated high blood pressure to one of cardiac insufficiency. Any lowering of systolic pressure which does not cause a change or is accompanied by a rise in the diastolic pressure means a weakening myo-cardium and is of ominous significance. Where the diastolic pressure lowers with the systolic pressure the prognosis is better.

There should generally be a sharp reduction in the total amount of food taken. The amount of restriction should be based on the physical type, habits and general activity of the patient in question. Most of them over-eat absolutely. The total daily intake of protein in a person in normal health may be stated to be 90 gms. There is advantage in restricting the daily protein intake in hypertensive cases to below this amount. In severe renal cases the protein should be restricted to 50 or even 40 gms. daily. We may be more liberal in the vascular than in the renal cases, especially if there is a fat or carbo-hydrate intolerance. More boiled meat may be allowed than broiled for the animal extractives raise blood pressure. Cereals, green vegetables, fruits and starchy articles should make up the bulk of the diet. Coffee and alcohol should be forbidden.

A strict milk diet is not suitable as a continuous diet in high blood pressure cases. Three liters of milk are required to provide enough calories. This contains 120 gms. of cassein which is excessive and likewise too much water. In emergencies where uremia or cerebral hemorrhage is to be feared a diet of milk and cereal is very often of utmost service.

If the heart and kidneys are not affected the amount of fluid ingested has no effect on the blood pressure. Thus in these cases large amounts of water may be given with benefit. When, however, there is cardio-renal insufficiency, restriction of fluids should be prescribed the amount being kept below 1200 cc. Salt should be absolutely forbidden if there is any edema. In any event the addition of salt to cooked foods should be forbidden.

Physical therapy may be employed as follows: Tepid sponge baths and showers for the angio-spastic and sclerotic; cold sponge baths and douches for the plethoric type. Carbonated baths as well as massage may be employed in all cases. The gentlest exercise, such as walking, may be prescribed for the sclerotic; moderately active exercise, such as horseback and golf for the angio-spastic type; more violent forms, such as gymnastics, running or swimming for the plethoric. High frequency is useful in angio-spastic, but of doubtful value in sclerosis, and no value in plethoric.

DRUG THERAPY

Iodine and iodides are useful in plethora of moderate use in angio-spasm and dangerous in sclerosis.

Uric acid solvents may be used to advantage in plethora. Sedatives and hypnotics are useful in all cases at different times; diuretics in cardio-renal cases; purgatives in all cases. Amyl nitrite and nitro-glycerine in anginal attacks; the other nitrites are of doubtful efficacy and are actually toxic to heart muscle. Venesection is useful in emergencies in all cases.

PROGNOSIS

The risks of hypertension are three: Uremia, cardiac failure and cerebral hemorrhage. An analysis of a large number of cases shows the cause of death to be—cardiac failure 36 per cent, uremia 36 per cent, and cerebral hemorrhage 14 per cent. The duration of life varies from 4 months to 11 years, with a little less than 4 years the average.

The conditions on which an individual prognosis is made are three: (1) Height of the pressure. Examination of a large number of insurance cases show that when

the pressure is above 150 mm. Hg. the mortality is 35 per cent in excess of the average. Where it is above 170 mm. Hg. the mortality is 400 per cent above the average. To repeat again the prognosis is very grave when both systolic and diastolic pressure are high. Conversely a fall in pressure is very serious when it portends an approaching cardiac failure. (2) The cause and causes. As a general rule the more obvious the renal or arterial lesions are to the clinician the worse the prognosis. There is still hope in the plethoric and angio-spastic types if treatment is begun in time. (3) The general symptoms. Each of the three terminal catastrophies are foreshadowed by events, which may appear trifling in themselves, but are of the utmost importance in watching for the final downfall. Increasing breathlessness, periodic dyspnea, edema about the ankles, pre-cardial pain and gallup rythm show an approaching cardiac failure. Cerebral hemorrhage is heralded by two sets of phenomina — hemorrhages elsewhere (nose, retina) in cerebral symptoms (headache, vertigo, mental confusion, transient palsies, etc.) The transient palsies are of the gravest significance—temporary aphasia, heminopia, strabismus, hemiplegia. Polyuria, early morning headache, and eye symptoms are the precursors of uremia.

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NEURO-SURGERY OF THE VEGETATIVE NERVOUS SYSTEM*

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By the title, Neuro-Surgery of the Vegtative Nervous System, we mean the application of surgery as a therapeutic measure to conditions which may be due to (1) involvement of that portion of the nervous system which controls trophic or vegetative function, and (2) to conditions due to other causes and which may be relieved by surgical interference with this system. For example, this system regulates the blood supply to the various parts of the body and in case of spasm of the blood vessels due to excessive irritability or disordered function of this system relief may be obtained by an attack upon it by either drug or surgical therapy, and a cure is often effected. This is an example of a condition resulting from involvement of this system. Intractable pain as in cases of pelvic carcinoma is an example of a condition due to other causes in which pain can be permanently relieved by an attack upon the vegetative or sympathetic system.

The fundamental facts which form a basis for the application of surgery to this system, are these: Practically all of our therapy for diseased conditions is directed towards the vegetative nervous system. By it we endeavor to produce blood pressure changes; e. g. Ischaemia, hyperaemia; increase or decrease gastro-intestinal motility; increase or decrease secretions; increase or decrease the heart rate; to lower fever; relieve pain, etc., and these changes can only be produced by drug or physical therapy which influences the vegetative nervous system.

But there are a great many conditions due to involvement of this system which do not yield to drug therapy, or if they do they require the continuous use of drugs. For some of these, surgical interference offers permanent relief.

Now, you may ask, why does surgery produce the same effect as drugs? The reason is simple. The vegetative nervous system consists of three physiological elements: They are (1) Motor, (2) Inhibitory, and (3) Sensory. Drugs may stimulate the motor element, as for example pilocarpine; or they may influence inhibition and cause relaxation, as for example atropine. Now then, we can produce the same effects by surgical attack and the results are much more permanent. This is done by the interruption of the nerves to the part which it is our desire to influence. But you reply that this results in paralysis. Our answer is that it does not because all of the muscles supplied by the

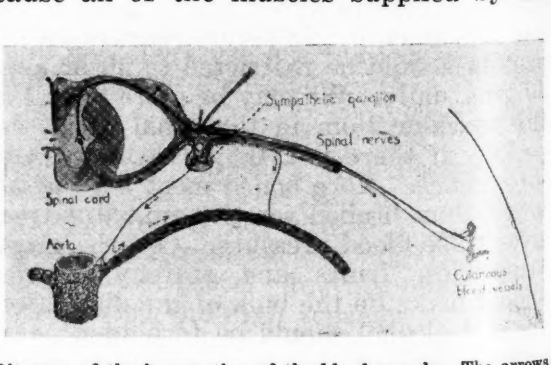


Diagram of the innervation of the blood vessels. The arrows with broken shafts indicate the path for vasoconstrictor impulses according to the theory of Leriche.

* Read at the thirty-first annual meeting of the Upper Peninsular Medical Society at Newbury, Michigan, August first and second, 1928.

sympathetic nerves are plain or visceral muscles and one of the intrinsic physiological properties of this muscle is that of automatic rhythmic contractility; because of this property, visceral muscle, when all of its nerve connections are severed, begins to contract rhythmically, and continuously, and like the heart muscle it does not go into a state of fatigue. If it were not for this physiological property of visceral muscle, surgery of the sympathetic system would be absolutely useless.

With this brief statement of the basis for the surgical therapy of the vegetative nervous system let us note briefly its application: Neuro-surgical methods may be and are applied to the visceral nervous system for affections of the eye as in glaucoma, and exopthalmos; to the neck for exopthalmic goitre; the lung for asthma, tuberculosis, bronchiectasis, pulmonary gangrene, and hiccough; the heart for angina pectoris; the blood vessels for Raynaud's disease, Buerger's disease, endarteritis obliterans, erythromelalgia and hypertension; to the skin for indolent ulcers, varicose ulcers, and X-ray burns; to the muscles for spasticity and Little's disease; the joints for chronic arthritis deformans; to the gastrointestinal tract for gastric crises in tabes, chronic painful gastro- and pyloro-spasm and Hirschprung's disease and ulcer.

In the surgical treatment of the conditions just enumerated we find upon physiological analysis that we endeavor to produce the following effects:

I. To relax (1) the blood vessel walls in Raynoud's disease, Buerger's disease, endarteritis obliterans, hypertension, indolent ulcers, varicose ulcers, chronic arthritis deformans, and X-ray burns, (2) the gutwalls in gastro- and pyloro-spasm and Hirschprung's disease, (3) the heart in angina pectoris, (4) orbital muscles in exophthalmos, (5) lung musculature in asthma, tuberculosis, bronchiectasis, and pulmonary gangrene, (6) voluntary muscle in Little's disease.

II. To interrupt the pain paths in angina pectoris and intractable pain as in the various types of sympathetic neuralgia.

III. To lessen secretions in glaucoma and chronic hyperidrosis.

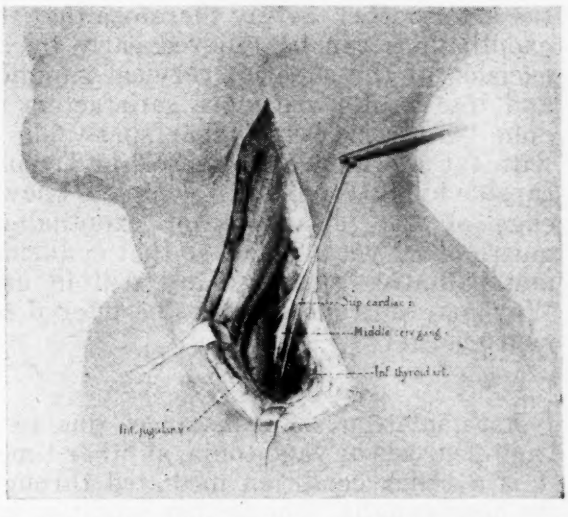
With these remarks as a basis let us note the surgical application to the conditions as outlined.

THE EYE IN GLAUCOMA

Jonesco first used the operation in which he excised the superior cervical ganglion for glaucoma. By 1900 the operation had gained so much favor that Ball at that time drew the following conclusions: (1) "That excision of the superior cervical ganglion is the most valuable procedure in the treatment of glaucoma." (2) "It is more applicable in treating glaucoma simplex than inflammatory glaucoma." (3) If no results are obtained in the inflammatory type from indectomy then excision of the superior cervical sympathetic ganglion should be done." (4) "In cases of absolute glaucoma with pain, the operation of superior cervical symathetectomy is to be tried before operating on the eyeball, etc." He claims to have found pathological changes in the ganglion sufficient to warrant this conclusion as well as his clinical results.

In 1904 Wilder reported 15 of 38 cases improved by the operation, Rohmer 48 of 114 and Loring claimed improvement in 70 per cent. In 1906 Gregg was a strong advocate of it, Jonesco had reported 30 out of 35 as improved and Blair because of his own and having in mind the cases of Wilder, Rohmer, Loring, Axenfeld, Weeks, Savage, Gregg, Abadie and others endorsed it. Black thought he had formulated a rule by which he could tell when it was indicated by the action of eserene.

However, the work was purely empirical except for some vague pathology, so Ball's enthusiasm waned until he finally tabooed the operation but in a recent paper he thinks it worthy of study. Now Sluder has discovered a connection between Meckle's ganglion and the ciliary body and is now treating glaucoma by alcoholic injection of the spheno-palatine ganglion. Byrd reports excellent results recently obtained by treating the "nose ganglia," and



Relation of the middle cervical sympathetic ganglion to the inferior thyroid artery.

Belaeff is having success in treating acute cases. So again an advance in the knowledge of the physiology of the visceral nervous system has brought the eye surgeons to a problem once solved but now to be worked over again on a firmer basis. So that we feel that in certain types of glaucoma neuro-surgery does offer some hope after all other measures have failed, but the attack should be made upon Meckle's ganglion.

The other eye condition—exopthalmos may be considered with exopthalmic goitre. The syndrome of this condition exactly fits into an excitatory disturbance of the cervical sympathetic system. Trousseau in 1860 advised an operation on the sympathetic for exopthalmic goitre. That stimulation of the cervical sympathetic caused exopthalmos was first observed in 1873. Claude Bernard's experiments in 1882 confirmed it. However, it was not until 1896 that Jaboulay did the first operation. In 1914 C. H. Mayo published an elaborate paper advocating the operation and gave the technique. He notes having observed better results when he combined a sympathetectomy with a ligation of the superior thyroid artery. Leriche reports a similar result. Of his 159 cases of cervical sympathetectomy for a multitude of ailments Jonesco reported 25 good results on exopthalmic goitre (1906) and Reinhard in 1923 says "exopthalmic goitre is entirely due to some abnormality of sympathetic innervation". Crile says "the greater part of the benefit of ligation is due to the break in the sympathetic nerve supply since the principal sympathetic nerves run on the artery". Odermott calls attention to the fact that under local anesthesia the ligation of a stripped artery is not as painful as one which includes the fascia around the artery. Let me say therefore that the exopthalmos can be relieved early by an excision of the superior cervical ganglion and the results are more satisfactory if done before the retrobulbar space fills in with fat and before the muscle in Tenon's capsule hypertrophies. A complete knowledge of the physiology of exopthalmic goitre is not yet at hand, so that empirical and palliative measures are still in use. Why may not one of these be offered by neuro-surgery?

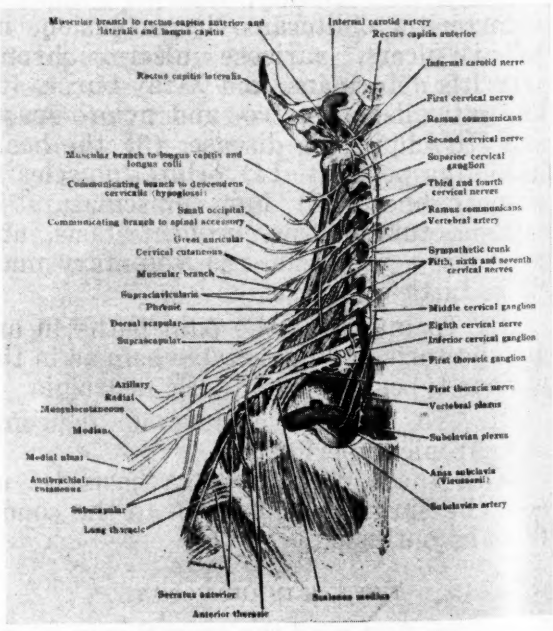
THE LUNG

Asthma is in some instances due to a vago-neurosis or vago-tonia, at other times it is a reflex condition mediated through the head ganglia. The former condition involving the motor or contrictor elements (vagus) the latter affecting the afferent element and inhibiting the inhibitor or relaxor element. I'm not considering the protein sensitization element in asthma although in these cases the nervous mechanism is involved. Kern of Philadelphia has cut the left vagus for asthma. Kummel in four cases between the ages of 23 and 65, cut the vagus with a failure in one case and complete relief in three. In 1924 Kaess reported five cases with relief in all. Florecken reports four cases with three relieved. Genersich combined a double cervical sympathetectomy with section of the two to five costal cartilages on the right side, and the patient was completely relieved. Kappis practices the procedure of cutting the right vagus below the recurrent laryngeal nerve.

Upon bronchoscopic examination a distinct difference can be noticed in the diameter of the bronchi on the operated and non-operated side. Here again the surgeons (except Kappis) are lagging behind their anatomy in not sparing the recurrent laryngeal by attacking the vagus in the thorax. They are all operating in the neck. Surgery here should bring as good results as it has in Raynaud's disease, Angina Pectoris, and in the next condition to be mentioned—pathological lung cavities. So it is mentioned as a measure to be considered.

PHRENICOTOMY

Viscontini proposed the operation of cutting the phrenic nerve in pulmonary tuberculosis; he operated eight cases and improvement was noted in five. He recom-



After Toldt, "Atlas of Human Anatomy," Rebman, London and New York.

mends it in unilateral tuberculosis in its early stage, and in cases where artificial pneumothorax is not feasible. He also used it in cardiac disturbances due to pleuro-cardiac adhesions, in pulmonary gangrene, bronchiectasis and persistent hiccough in which it must be bilateral. Here again avulsion of the nerve, not a procedure without some hazard, is being done by some when a resection of a segment will serve the same purpose.

Some authors have called the sympathetic component of the phrenic an accessory phrenic and have noted that when this is not cut the results are not so beneficial. It may be that the section of the sympathetic component is the important thing because it supplies the plain muscle of the visceral and diaphragmatic pleura and pericardium. It looks again as if the surgeon is a little behind on his physiology and anatomy. But in certain types of tubercular cases phrenicotomy is a valuable therapeutic measure and deserves recommendation.

ANGINA PECTORIS

It is rather singular that this condition was one of the last for which Jonesco recommended cervical sympathetectomy when Francois Franck had suggested it to him 17 years before he did it in 1916. He removed the middle and inferior cervical, and the stellate ganglia, the cervical sympathetic chain, and the sympathetic plexuses from the inferior thyroid and vertebral arteries on the left side. Note that he left the superior cervical ganglion the one to be removed if any. This was certainly an elaborate and delicate procedure. In 1920 the patient was still free from all symptoms with normal heart, pulse, and respiration. The x-ray showed a dilated aorta and a broadened heart shadow.

In his second case, a man 54, he only resected the left nerve and obtained the same result.

Renon accidentally removed the sympathetic plexus (the aortic probably) in a case of aneurysm of the aorta in making repair with fascia lata and the patient was relieved of pain, so Delorme advised this for relief of pain in aortitis.

In 1923 Coffey and Brown reported six cases with one death and five improvements from excising the superior cervical ganglion only. At present Coffey excises this ganglion and cuts the superior cardiac nerve to the vagus. A rather puzzling statement to one who is familiar with the anatomy of these structures. It has been shown that fibers go from the superior cervical ganglion to the aorta. The basis for this operation is the following:

In 1866 Ludwig and Cyon discovered a depressor nerve to the heart and this was regarded by them as a part of the vagus, and later physiologists haven't learned that it isn't. This nerve is from the sympathetic through the superior cervical ganglion and in addition to transmitting depressor impulses it also carries afferent pain impulses. At present the consensus of opinion seems to be that the afferent impulses in angina are the chief cause of the trouble.

The theories of the disease are two. (1) According to MacKenzie and Danielopolu it is cardiac fatigue. (2) According to Albutt, Vaquez and Wenckebach it is aortic disease. Be that as it may, the four operations for the disease at present are as follows:

(1) Jonesco's—extirpation of the middle, and inferior cervical and stellate ganglia with or without severance of the superior cardiac nerve.

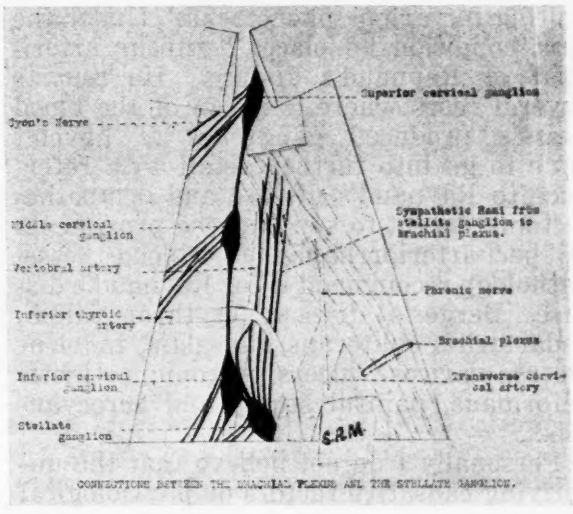
(2) Brunning's—extirpation of three cervical and the stellate ganglion.

(3) Coffey and Brown—excision of the superior cervical ganglion and section of the superior cardiac nerve.

(4) Hoffer and Eppinger—section of the depressor nerve.

I might say in passing that in visiting Leriche's clinic last summer I found that he recognizes two types of angina—a cervical and pectoral. For the cervical, he sections the superior cardiac nerve and for the pectoral the inferior cardiac nerves. Lilienthal has also described two types, one of which he calls substernal and the other abdominal.

At present it begins to look as if only the



CONNECTIONS BETWEEN THE BRACHIAL PLEXUS AND THE STELLATE GANGLION.

afferent nerve of the heart need be cut to relieve angina since Mosser, Jonesco, Montgomery, Tuffier, Brunning, Borchard, Mied, Friedlander, Smith, Diez, Kappis, Pleth, Hoffer, Eppinger, Tschermak, and others are of this opinion and the physiological as well as the clinical facts point in that direction. I do not believe that any known therapeutic measure has brought more to ease the mind and body of a heart-sick individual than has the operation for angina pectoris and the Hofer-Eppinger operation is simple and can be done in a few minutes under a local anaesthetic.

If what we have said about angina pectoris is true then the results obtained in conditions mentioned thus far have been due to two things, the interruption of *pain paths* and relaxation of *plain muscle*. This is the gist of the therapeutic effect of visceral nerve surgery which is again beautifully demonstrated in its application to the blood vessels.

RAYNAUD'S DISEASE

In 1851 Claude Bernard noticed that when the cervical sympathetic is cut on one side in the neck of a rabbit that the rabbit's ear on that side is warmer than the one on the other side. This was found to be due to the fact that the blood vessels on the cut side dilate, and he also noticed that if the distal cut ends were stimulated that the ear became blanched.

Brown-Sequard confirmed this observation and also discovered fibers which if stimulated caused dilatation of blood vessels. Thus were the vaso-motor nerves discovered.

Leriche has summarized the effect of the sympathetic disturbance upon blood vessels as follows: (a) *A pure reaction*—resulting in painful ischemia followed by dilatation. (b) *A disturbed reaction*—resulting in various phenomena. Under the first condition he places "stupeur arterielle" or Raynaud's disease. He reports several cases where a spasm of the blood vessels produced gangrene. I haven't time to go into further detail with reference to Raynaud's disease and sympathetectomy except to say that the proponents of peri-arteriorrhaphy for blood vessel pathology recommend it for Raynaud's disease, Berger's disease, erythromelalgia, endarteritis obliterans, causalgia, indolent ulcers, varicose ulcers, chronic arthritis deformans, painful stump and acrocyanosis.

Personally I do not believe that the underlying causative factors or physiological disturbances in all of these conditions can be removed by directing a surgical attack upon the sympathetic system. However, I am convinced that it is of value in Raynaud's disease and causalgia. So that in order to select the case which will be benefitted by surgery a very careful differential diagnosis must be made.

But what I do want to emphasize is this. That I believe a *ramisectomy* is sufficient to give the desired result, and at most a ramisectomy plus a ganglionectomy, and that the blood vessels should not be disturbed by doing a peri-arteriorrhaphy.

We have demonstrated to our entire satisfaction at Receiving hospital that ramisectomy even in the cervical region (where it is claimed by some neuro surgeons including Adson of the Mayo clinic that it is not effective) gives results identical with the more elaborate operation. The rami to the brachial plexus can be isolated and very easily cut. The work of Royle and Hunter gives ample evidence of the effectiveness of ramisectomy for the lower extremity.

Another proof is that in treating varicose and indolent ulcers by periarteriorrhaphy and skin grafting Leriche tells me that when he fails with stripping the artery that he then resorts to ramisectomy. Incidentally very happy results can be obtained by treating ulcers in this way. Leriche is preparing a paper for publication giving his recent results in the use of this method. The most magical results can be obtained in treating ulcers from X-ray burns by a sympathetic neurectomy. Even as conservative an internist as Barker commends it so I feel that ramisectomy is the operation of choice.

The most recent application of ramisectomy has been to cases of Hirschprung's disease, or megacolon, with very promising results.

VAGOTOMY

Braun some time ago proposed the division of the gastro-colic omentum and gastro-hepatic ligament in the region of the pylorus to alleviate painful stomach spasm.

Kostling did a vagotomy below the diaphragm on three cases of long recurring painful spasms of the stomach with a complete cure in all cases. Operation for gastric-crises in tabes has brought relief in several instances.

One other condition to be considered under this head is *spasticity*. This was thoroughly worked out on a scientific basis by a large number of investigators before its application. The cases for operation

must be carefully chosen. The spasticity must be of cerebral origin and unassociated with tremor, and the patient's should be of good mentality, and able to stand and sit alone. An operation is of value when the stiffness interferes with the movements of one's arms and legs. Contracture deformities must be corrected by orthopedic measures which may include the Stofell operation. The operation consists of ramisectomy from the second lumbar to below the fourth lumbar ganglia, dividing all of the gray rami, for the leg region; for the upper extremity a ramisectomy of the fibers to the brachial plexus is done. Within the scope of the application of this operation is Little's disease. This is a field that holds many possibilities yet to be worked out and applied but already it is yielding some satisfying results.

In conclusion: While we shall continue the practice of attacking the ganglia and rami for neuralgias of the head and deep seated conditions such as angina pectoris, we have already begun the alcoholic injection of the blood vessel sheath for peripheral conditions such as leg and foot ulcers, and angiospasms of the peripheral vessels. Later we may apply this to the treatment of certain types of head pains.

We feel very strongly that as a more refined knowledge of the function of the sympathetic system is acquired that further refinements in surgical technique will follow, and that more simple operations will be used. We are not proposing neuro-surgical therapy as a cure for all of the conditions mentioned but we do feel that the general practitioner should know something about the application of neuro-surgery to the conditions mentioned. We also feel that the patient suffering from diseases in which relief has been obtained by neuro-surgical methods is entitled to this knowledge and it is the physician's duty to inform him.

A COMPLICATION OF PULMONARY TUBERCULOSIS AND ITS TREATMENT*

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In the light of our present knowledge of the different stages of pulmonary tuberculosis, our procedure in treatment, even in advanced cases, would be plain, were it not for the complications. Empyema is one of such complications, always dreaded because of its stubborness in responding to treatment. Though, fortunately, not often found, its presence usually makes the prognosis unfavorable. One sees in sanatorium work patients with pleural fistulas of several years duration following attempts with surgical treatment. These patients achieve a certain improvement in their general condition under the general hygienic-dietetic treatment of the sanatorium, the fistula ceases draining for a period, and then, with no appreciable cause, general discomfort returns, the pleural sac refills, and the fistula reopens with pus draining. This condition repeats itself, sometimes for years, until a mixed infection, with concurrent cachexia terminates the case.

THE DIAGNOSIS EASY

Tuberculosis empyema is usually due to breaking down of contiguous tuberculous foci. Diagnosis is easily made by a physical examination with aid of the x-ray and of the laboratory. We all know the physical signs: lack of expansion of the chest where the effusion is lodged, this emithorax being larger than the opposite side, widening or bulging of the intercostal spaces, absence of tactile fremitus, flatness on percussion over the effusion, with change in the area of flatness with change of position of the patient's chest, tympanism above the level of the fluid, absence of breath sounds in the area of flatness, displacement of the heart to the opposite side.

Fluroscopy and x-ray plates will show clearly an area of heavy density with a fluid level and the displacement of the mediastinum. An exploratory puncture will show the nature of the exudate. It may be sterile, may contain only tubercle bacilli, or these with other microorganisms. It may only contain lymphocytes or show many polynuclears. This seems to be very important for the prognosis: a mixed infection and the predominance of polynuclears has a more serious prognosis.

WATCHFUL WAITING ADVISABLE

The orthodox treatment of tuberculous empyema is that of a watchful waiting. Tapping of the chest usually makes conditions worse. This can be easily understood: the removal of the fluid removes also the mechanical compression of the diseased lung, with following reactivation of the lesions and increased toxemia. When, however, there is continuous tuberculous

* Read at the thirty-first annual meeting of the Upper Peninsular Medical Society at Newberry, Michigan, August first and second, 1928.

toxemia with dyspnoea and embarrassment of contiguous organs, especially the heart, the fluid should be drained. Other accepted treatments are, paracentesis plain or combined with artificial pneumothorax, flushing of the pleural cavity with antiseptic solutions, like Dakin's, until this solution returns clear; rib resection, especially when the primary focus is an osteomyelitic rib; actual cautery or excision of the pleural focus of infection; thoracoplasty. Each of these different treatments have their indications, but the final results are seldom satisfactory.

Following is the report of a case where oleothorax was used:

Miss E. B., a house-maid, American born of Swedish parents, age 18, single, admitted in Morgan Heights Sanatorium May 2, 1927 with diagnosis of pulmonary tuberculosis.

Family History: Father and mother living and well, two brothers and six sisters living and well, two brothers died of tuberculosis several years ago, one sister died of hydrocephalus two years ago, and one sister, a terminal case of tuberculosis, in Morgan Heights Sanatorium. (This latter died June 30, 1927).

Previous History: Habits and condition of health as a child, good. Previous diseases: Measles and tonsillitis (operated in 1925). Menstruation started at 14, since regular.

Present History: Had pneumonia in January 1927. Losing strength and weight since. Has occasional dry cough, dyspnoea on exertion, slight hoarseness. Sleep and appetite good. Bowels and micturition normal. Height: 57½ inches, weight 132 pounds, clothed (average weight for age and height 136 pounds). Temperature 99.4, pulse 124, respiration 24.

Physical Examination: General development, good. Nutrition, fair. Complexion, sallow. Mucous membranes, pale. Glands, negative. Eyes, ears, nose and throat negative. Abdomen, negative.

Heart: Displayed towards left, apex in 5th I. C. S. Sounds all normal, excepting for a soft systolic murmur at apex. Apical point of maximum intensity two inches outside of nipple line.

Lungs: Inspection: Chest of conical shape, fairly well developed and poorly nourished, in contrast with the rest of patient's body. Right emithorax does not show any expansion, and intercostal spaces are bulging.

Palpation: Absence of tactile fremitus all over right chest, normal at left.

Percussion: Tympanitic over right apex. Flatness from second rib to base anteriorly and practically all over posteriorly. Left chest somewhat hyper-resonant, excepting for heart dullness that reaches anterior axillary line at fifth I. C. S.

Auscultation: Very faint B. S. in right apex, absent B. S. to base. Harsh B. S. in left lung, especially in apex and at base. Voice conduction abolished at right, normal left. No whisper transmission or whisper pectoriloquy at right, normal whisper transmission at left.

X-ray taken May 3, 1927 shows right apex clear with a dense shadow below first rib, right. Left lung transparencies are normal, though somewhat darker field (emphysematous) at left base. Heart shadow appears displaced to left with apex 1½ inches from outer chest wall; arch of the aorta protrudes 1½ inches from outer border of left spine in second I. C. S.

Sputum brought to the laboratory was mainly saliva and was negative for tubercle bacilli on repeated examination. Urine: straw, turbid, acid, sp. gr. 1006, albumen gm. 0.35, sugar negative, no casts. Pleural exudate, withdrawn for diagnostic purposes, was thick seropus, positive for tubercle bacilli (Gaffky VIII), no secondary organism present, many pus lymphocytes.

Diagnosis: Tuberculous empyema, right; compensatory emphysema, left. Mitral insufficiency. Patient was put to bed, tr. iodine, two drops in milk t. i. d., a. c., but, as she was losing weight, temperature persistently abnormal, pulse 92-128, dyspnoea present on slight exertion and heart murmur also persistent, on June 6th, 1927 we aspirated 650 c.c. of seropurulent fluid from right pleura and injected 400 c.c. of sterile air. Manometer reading was lost. Temperature that p. m. was 100, but pulse 104, respiration 24. A study of x-rays then showed collapse of right lung. Patient comfortable.

June 9th, 2300 c.c. of seropurulent fluid were aspirated and 1000 c.c. of air injected. Pressure after treatment 3½ negative. Patient comfortable. Fluoroscopy immediately after treatment showed collapse of right lung and line of fluid down to level of sixth rib, right.

Aspiration of 2400 c.c. of same fluid was repeated June 16th, and 1000 c.c. of air injected. Pressure neutral. X-ray showed same findings of former fluoroscopy. Patient comfortable.

After this we tried to keep a neutral intrathoracic pressure, removing fluid and injecting sterile air, until towards the end of July patient started to complain of pain in left chest, great dyspnoea, cough, difficulty in raising sputum, temperature 101, pulse 120, respiration 28. By the first of August temperature was 100 in a. m. and 103 in p. m. and kept with this high curve until August 11th, when it started to go back around normal. Examination August 1st showed clearly a pneumonic process of the left lower lobe; this was confirmed by an x-ray plate taken August 10, 1927. Sputum, mucoid was positive for the first time. Digitalis and stimulants were used as medication. September 1, 1927 patient was again acutely ill with temperature of 102.6 in a. m. and 104.6 in p. m. Pulse 128-160, respiration 32-40. Re-examination showed reacutization of pneumonic process in left lower lobe, with dull percussion note and coarse rales. X-ray not taken, because of condition of patient. Patient was very ill until September 14th, when condition subsided by crisis. Weight was 112 pounds. Emesis and diarrhoea also characterized this period of illness. Same condition appeared early in November and towards the middle of it. Aspiration of fluid was continued, but it would return to former levels, although re-expansion of right lung was maintained.

January 1, 1928, in hopes of starting the year right, we wanted to try a new way of combatting this empyema, and oleothorax was resorted to. 1050 c.c. of seropurulent fluid was aspirated and 100 c.c. of gomenolated oil was injected in the pleural cavity. This was done several times until March 8, 1928, when last injection was made. Patient has been normal and inactive since. Examinations since May last shows total absence of pleural fluid, thickening of right pleura, re-expansion of right, and normal condition of left lung. No cough and no expectoration are now

present. Heart is in normal position, sounds are normal, weight has steadily increased until today it is 145 pounds. Patient is an ambulatory case, and has no complaints whatever. She is on regular walking exercise of three hours per day, one hour of occupational therapy, and one hour of light tasks around the hospital. Soon she will be ready for discharge.

I have wanted to report this case on account of the oleothorax with Gomenol. Gomenol is an essential oil, first used by Bertou in France, and afterwards by Kuss in the treatment of pleural effusions. Bertou, in an article published in June 1926 of the Revue de la Tuberculose, especially recommends it in primary tuberculous purulent pleurisies, when simple aspiration and replacement by pneumothorax fail to achieve success, and this before too great a thickening of the pleura has occured. In America it has been used with success in the past years by Matson of Portland, to whom I owe the first information on this method of treatment.

Gomenol is used in 2 to 8 per cent solutions in olive oil, or liquid petrolatum. I used a 5 per cent solution in Squibb's Petrolatum. A needle of 18 gauge was used, in the 6th I. C. S. at a point between middle and posterior axillary lines. The solution heated to body temperature, around 98, was injected slowly, not more than 50 c.c. per minute. Gomenolated oil is slowly absorbed by the pleura in four to ten weeks, according to the amount. Its antiseptic qualities are high and its irritative effects are negligible, if any, when used in proper solution and quantity.

I found it quite essential to first remove all or as much as was possible of the pleural exudate through the needle provided with a stop cock, then to inject the gomenolated oil through this same needle, and at the end of the operation to leave drops of this oil in the tissues while removing the needle thus insuring antisepsis of the chest wall and in order to avoid a fistula. A small pledget of sterile cotton with collodion was enough to close the small needle opening. I have always used the potain and administered the oleothorax with patient in the sitting position in front of the fluroscope. Of course this patient had the advantage, during her oleothorax, of the hygienic-dietetic treatment of the sanatorium, and this, no doubt, contributed substantially to the success and to the final arrestment of the disease, just as it had contributed to overcoming the fatal family tendencies and previous pneumonic and intestinal complications. It is with intense satisfaction that I see my patient ready to go back to a useful life.

I present this case with the hope that this method be tried in similar conditions and results reported.

AURICULAR FIBRILLATION

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ESCANABA, MICHIGAN

Auricular fibrillation is a disturbance in the regulating mechanism of the heart in which the normal systole of the auricle is replaced by a fibrilliary or twitching action of the musculature, the auricle remaining in continuous diastole. In the normally acting heart the impulse originates at the sino-auricular node, situated at the junction of the superior vena cava with the right auricle; from there it spreads in a wave-like motion over the auricle to stimulate the auriculo-ventricular node and cause ventricular contraction. In fibrillation the action is quite different, the impulse following what is called a "circus movement" around the mouths of the superior and inferior vena cava. The impulse travels at a rate of about 450 revolutions a minute and follows a very irregular path, due to the fact that it is necessary that it find muscle fibers that have recovered from the preceeding stimulus and are again receptive to stimulation. The auriculo-ventricular node is unable to transmit all of this rapid-fire of impulses and the result is a rapid and irregular action of the ventricle. The effect from the failure of the auricle to contract is not in itself appreciable, for normally the auricle propels only about one-eighth of the blood flowing into the ventricle, the remainder entering it because of a difference in pressure. The effect on the circulation from fibrillation is due almost entirely to the increased rate and irregularity of the ventricle.

Fibrillation may be permanent or transient, the great majority of cases being permanent. Between sixty and seventy per cent of the cases of heart failure have this disturbance, and of the various disorders of the heart beat forty per cent are of this type. Mitral stenosis is the condition most frequently found associated with fibrillation, and next in frequency comes chronic myocarditis. Hyperthyroidism is often the underlying cause, but here the fibrillation is usually of the transient type. It may also occur in the course of various infections, particularly

* Read at the thirty-first annual meeting of the Upper Peninsular Medical Society at Newbury, Michigan, August first and second, 1928.

with pneumonia and rheumatic fever. Also it may at times appear in an apparently healthy individual in whom no heart disorder or other disease is discoverable. The age incidence shows the affection in the non-rheumatic group to be mostly in those of advanced age, while in the rheumatic group it is more often found in the third and fourth decades.

The morbid anatomy shows valve lesions—principally mitral, enlargement of the heart, degeneration and fibrosis of the heart muscle, and inflammatory changes. In a small percentage no heart lesions are found post mortem.

The recognition of fibrillation is not difficult in most instances. We find a rapid and grossly irregular heart action, irregular in both time and force. The rate is nearly always over ninety. The count at the apex is nearly always higher than at the wrist, as many of the beats are too weak to reach the wrist. This pulse deficiency becomes greater and the irregularity more pronounced as the rate is increased. The rule, as laid down by Sir Thomas Lewis, is that, given a decompensated heart, grossly irregular in time and force, a rate of over one hundred at the apex, and a pulse deficiency of ten or more beats, in nine cases out of ten it is auricular fibrillation. It is safe in most instances to make the diagnosis on the clinical evidence alone, and only rarely is it necessary to employ graphic methods to confirm the diagnosis. Another characteristic of fibrillation is that the length and strength of a given beat bear no relation to the duration of the preceding pause. In a normal heart a long pause is followed by a strong beat and a short pause by a weak beat. In a fibrillating heart this relation is lost, short pauses may be followed by strong beats and long pauses by feeble beats. There are two forms of irregularity with which fibrillation may be confused, extrasystole and partial heart block. Under the influence of exercise, or the giving of amyl nitrite of belladonna to accelerate the heart rate, these irregularities become less pronounced or are entirely lost, while with fibrillation the irregularity increases with the increase in rate. The irregularity of fibrillation is generally permanent, while the other irregularities come and go. Finally, if with an irregularity as described we have mitral stenosis, chronic myocarditis or hyperthyrodism the diagnosis need not be in doubt.

The symptoms may be mild or grave, or there may be no symptoms, depending on the rate and degree of irregularity of the heart action, and on the degree of degeneration of the heart muscle. With some patients, if the heart rate is slow and there is little myocardial change, a fairly efficient circulation is maintained over a long period and there may be no symptoms. In a severe case the symptoms are those of circulatory failure—dyspnoea, cyanosis, dropsy, diminished urinary output, congested, enlarged and tender liver, and diminished response of the heart to effort. There may be cough and haemoptysis, and in a small percentage there is embolism. The patient is conscious of the irregularity and of a fluttering sensation in the chest and neck. The onset of fibrillation may be sudden or gradual. The permanent type is often preceded by several paroxysmal attacks before becoming permanent.

The prognosis depends largely on the underlying condition causing the fibrillation, and on the condition of the heart muscle. Chronic myocarditis, especially if there is hypertension, offers a less favorable prognosis than if we have a valvular lesion and only slight myocardial change. The response to treatment largely determines the prognosis, for the outlook is much better when the heart can be slowed to a nearly normal level and kept there. The danger from embolism must be considered, for a thrombus may become dislodged from the clotted blood in the auricular appendices. There is especial danger from this where the normal rhythm is restored after a paroxysmal attack, or when it is restored after treatment with quinine.

In the treatment, rest, diet and drugs are all important. If the rate is not over ninety at the apex with the patient at rest, and there are no symptoms of heart failure, it may only be necessary to limit the physical activities of the patient. If the heart rate is rapid and there as signs of circulatory failure, with edema and hypertension, the patient should be kept in bed, drug therapy instituted, and be put on the Karell diet for from two to seven days. This diet gives a low proteid and low salt intake. After the edema is removed he should be limited to one liter of fluid intake a day and kept on a low proteid and low salt diet. The confinement in bed should be prolonged for some time after the symptoms are relieved.

We need consider only two drugs in the treatment of fibrillation, digitalis and quinidine. Digitalis is the safer and the drug more generally employed. The action of the two differ in that quinidine stops the fibril-

lation of the auricle while digitalis does not, but simply blocks some of the impulses at the auriculo-ventricular node, thus slowing the rate of the ventricle. Quinidine has a two-fold action—it increases the length of the refractory period of the muscle fibers, and thus tends to break up the "circus movement"; it also tends to slow conduction, so if the slowing is sufficient to offset the lengthening of the refractory period fibrillation is not stopped. On this account the action of quinidine is less certain than that of digitalis. If digitalis is used it must be given indefinitely so as to keep the patient digitalized. Some patients are hypersensitive to the action of quinidine and may develop urticaria, headaches, dizziness and other symptoms. The effect from quinidine is rarely permanent and fibrillation returns in the majority of cases. With quinidine there is also danger from embolism as the contraction of the auricle, on the return of normal rhythm, is likely to dislodge thrombi from the auricular appendices and release them into the circulation.

In giving digitalis we give enough to digitalize the patient. For the average patient weighing 150 pounds about two grams of the powdered leaves, or twenty cubic centimeters of the tincture, is required. This should be given in divided doses over a period of two or three days or a week, depending on the urgency of relief. The digitalis pills of one and one-half grains offer a convenient form in which to give it. Give one gram, or ten pills, the first day in divided doses. See the patient the following morning, and if there are no signs of digitalization give one-half gram that day, and the remaining half gram on the third day if necessary. When the heart has been slowed sufficiently, or has become regular, stop the digitalis. If the heart has become regular it may mean that complete heart block has developed, in which case it is dangerous to continue the drug. Never slow the heart to below sixty at the apex. It is well, if possible, to stop the drug before signs of digitalis intoxication appear. The signs of this are that we get a coupling of the beats, the patient feels mean all over, is nauseated, may have vomiting and diarrhea, and may even become delirious. If the patient has had digitalis within seven to ten days previously it is not safe to give it in large doses on account of the danger from intoxication, and not knowing what amount of digitalis is still in the system. It is better then to give one and one-half grains three times a day. The system excretes one and one-half to two grains of the drug in twenty-four hours, so after the patient has become digitalized it is well to continue with that amount daily as a maintenance dose. If the patient is unconscious or is vomiting, so that digitalis cannot be given by mouth, it can be given intramuscularly, or we can give it by rectum, using the infusion or tincture. If rapid digitalization is indicated it can be given intravenously in the form of digitan or digifolin, in dosage of one minim per pound of body weight. A very prompt action results after the intravenous dose, the reduction in the heart rate being perceptible within five to ten minutes, with the greatest fall taking place within the first thirty minutes, and after that a gradual fall for about two hours.

In fibrillation the action of digitalis is almost specific. In a patient with fibrillation and a failing circulation its action is most striking. Before giving the drug, if we picture one of the more grave cases, we have cyanosis, dyspnea, general edema, enlarged and congested liver, and excretion of only a few ounces of urine daily. After the patient has become digitalized, the improvement is rapid and marked, he is comfortable, can lie down, breathes easily, passes large quantities of urine, and the edema is rapidly disappearing .

In giving quinidine it is best to first give a trial dose of two grains to determine individual susceptibility. If no untoward symptoms develop it may be continued in doses of five grains every four hours until the normal rhythm returns, which is usually within a few days to a week in cases which respond to this treatment. Quinidine is effective in stopping fibrillation in only about 50 per cent of cases and in the majority of these it recurs sooner or later. Because of the uncertainty of results, and the danger from embolism, it is not so generally used as digitalis.

IODIN IN HYPERTHYROIDISM*

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Some of the members of this Society requested me to discuss iodin hyperthyroidism because of the widespread use of iodin in Michigan and because of its importance as a factor in the cause of hyperthyroidism. This condition of induced hyerthy-

* Read at the meeting of the Kent County Medical Society, Grand Rapids, Michigan, April 25, 1928.

roidism, as everyone admits, has become extremely prevalent throughout the country during the past few years, and I shall devote most of the time allotted to me to the discussion of this particular phase. I wish also to discuss briefly the use of iodin in exophthalmic goiter and in toxic adenoma.

IODIN AS A CAUSE OF HYPERTHYROIDISM

Kimball reported 309 cases of induced hyperthyroidism observed at the Cleveland clinic, de Quervain 457[12], and at the Jackson Clinic we have seen sixty patients within a short time. This represents but a small number of all the cases, judging from the literature and from communications received from numerous physicians. At the last meeting of the American Association for the Study of Goiter, Plummer challenged the contention that iodin hyperthyroidism is a distinct clinical entity. He maintained that this condition and toxic adenoma are synonymous. It is not my purpose to bring before you this discussion of the rather technical subject of the differential diagnosis of the various forms of toxic goiter. Yet, in order to understand the proper treatment of goiter it is essential to have a clear understanding of its various forms.

In this treatise I am assuming that goiter may be classified into two groups, non-toxic and toxic. In the first group are the simple, adolescent or colloid, and the adenomatous forms. The toxic goiter group is divided into exophthalmic and adenomatous and this is subdivided into toxic adenoma and iodin hyperthyroidism. I realize that perhaps you do not all support this classification, but that some of you agree with Crile and Graham that toxic adenoma and exophthalmic goiter are synonymous.

Leaving aside for the moment the discussion of exophthalmic goiter, it is my contention that an adenomatous goiter does not become toxic in patients less than thirty years old unless this is provoked by the injudicious use of iodin. It other words, toxic adenoma is seen only after the third decade. One must remember that exophthalmic goiter may be superimposed on adenomatous goiter at almost any age and that the association of these types of goiter is commonly observed.

Iodin hyperthyroidism, on the other hand, may occur at almost any age. One of the patients in my series was a girl, aged fifteen, with a large adenomatous goiter that had become toxic after the use of a patent medicine containing iodin. Another victim was a man sixty-five years old who had taken the same remedy. There is no question that the wholesale distribution of iodin in the country during the past decade, by certain physicians, druggists, and even grocers, is responsible for the large number of cases of this kind. The same condition was found in Switzerland in the nineties following the widespread use of iodin. So common did this become that Kocher repeatedly called attention to the danger of the indiscriminate use of iodin, and Breuer in 1900 gave an excellent description of what he called "iodin Basedow." In fact, so successful were their efforts that physicians generally became afraid to use iodin in hyperthyroidism for fear of accentuating the symptoms. The textbooks and the medical schools of this as well as foreign countries warned against the use of iodin in exophthalmic goiter. Of course, no attempt was made by either foreign or domestic writers to differentiate the various forms of toxic goiter. Consequently the literature contained many reports of supposed cases of exophthalmic goiter or Basedow's disease induced by the use of iodin. It is now recognized that this condition was not exophthalmic goiter, but iodin hyperthyroidism. However, it was not until 1913 that some of this confusion became clarified. At that time Plummer clearly differentiated between exophthalmic goiter and toxic adenoma. While this classification has not been generally approved and is still disputed by many European and American physicians it is gradually gaining international recognition.

In 1924 I[4] reported a series of eighteen cases of adenomatous goiter in which it was clear that toxic symptoms were induced by the indiscriminate use of iodin. The following year a larger series of thirty-eight cases was reported[5] and the name, iodin hyperthyroidism, was suggested for this syndrome. It seemed to me that the term, iodin Basedow, as suggested by Breuer, was misleading as this condition was clearly not exophthalmic goiter or Basedow's disease. In the first place the pathologic picture showed no resemblance. The absence of the typical hyperplasia and hypertrophy so characteristic of this condition, except in isolated areas, was apparent. The goiter was typically nodular and asymmetrical rather than smooth, uniform and symmetrical. Clinically, marked points of difference were to be noted. While the history in both was likely

to be acute and of but a few months' duration, patients having exophthalmic goiter seldom, if ever, had received any iodin treatment up to that time. Moreover, if any enlargement of the thyroid had been noted it was of short duration, whereas patients with iodin hyperthyroidism had noticed a goiter for fifteen years or more. Tremor, nervousness, tachycardia, palpitation, and loss of weight occurred in both types, but the characteristically variable and at times ravenous appetite of Basedow's disease was never noted in iodin hyperthyroidism. Nor did the gastro-intestinal crises occur even in fatal cases. I have never observed either exophthalmos, thrills, or bruits in iodin hyperthyroidism, nor has fever been present even in terminal states. Hypertension occurred as in toxic adenoma, but the typically low diastolic pressure of exophthalmic goiter was not found. Finally, hyperthyroidism in exophthalmic goiter could be temporarily controlled by the use of Lugol's solution, whereas iodin naturally aggravated the symptoms of iodin hyperthyroidism. In fact, three cases proceeded to a fatal termination in spite of all medical measures.

Thus it may be readily seen that there is no reason for confusing these two distinct clinical entities any more than there is for mistaking diphtheria for scarlet fever. Is this condition similar to the one Plummer has designated as toxic adenoma? While no points of characteristic difference appear in the pathologic picture, the same is true of non-toxic and toxic adenoma. Clinically, however, I believe that a distinct difference exists and that it is important from a therapeutic standpoint to recognize this difference. There is a high operative risk in the presence of severe, acute iodin hyperthyroidism, just as there would be in a crisis in a case of exophthalmic goiter. No effective pre-operative agent such as Lugol's solution has as yet been discovered for these cases, but in the majority discontinuation of the iodin, quiet, rest, and sedatives will bring about a distinct improvement within two or three weeks, and will greatly lessen the operative risk. Apparently a certain number will proceed to a fatal termination in spite of any medical or surgical measures.

What, then, are the factors that serve to differentiate this syndrome from that of toxic adenoma? In my experience toxic adenoma has never been observed in patients less than thirty years of age. It is a disease of middle life and in a series of cases that I recently reviewed[7] the average age was forty-four. While the average age of patients with iodin hyperthyroidism was thirty-five years, the age of 40 per cent of the patients observed was thirty years or less. Two cases occurred in children fourteen years old. In none of these patients was any symptom of hyperthyroidism noticed previous to taking the iodin. In several instances an excellent opportunity was afforded for affirming this assertion.

A woman, thirty-six years old, was examined at the clinic in 1922, and a diagnosis of multiple non-toxic adenoma was confirmed by a metabolic rate of plus 4 per cent. The patient was advised either to leave the goiter alone or have it removed. Four months later I was called to see her and found her in an extremely toxic condition. She had lost 29 pounds, was too weak to walk, was trembling, and was extremely restless and nervous. The pulse rate was 140; the pulse pressure was increased, but the diastolic pressure was high. Her appetite was poor and had been for several months. No thrill, or bruit, or exophthalmos was present. There was marked quadriceps loss. On examination the metabolic rate was found to have increased to plus 44 per cent. The patient

Fig. 1—In this case iodin hyperthyroidism developed as a result of patent medicine.

Fig. 2—Same patient as in Fig. 1, after operation.

admitted having taken nine bottles of a patent goiter medicine; when this was analyzed by the propaganda department of the American Medical Association it was found to contain a high percentage of ferrous iodid. After two weeks' symptomatic treatment the woman improved enough to permit operation (Figs. 1 and 2). Another woman, forty-nine years old, was given iodin for four months to reduce an adenomatous goiter. Shortly before she came to the clinic, acute symptoms of hyperthyroidism had developed. These patients frequently exhibit a peculiar form of restlessness even bordering on delirium. There was a wild look in the eyes suggestive more of psychosis than of exophthalmos (Fig. 3). In spite of such sedatives as morphin, scopolamin, chloral and bromids, this patient was never quiet during the three days before her death. Her pulse rate was approximately 175 on admission and remained there despite the frequent hypodermic doses of digifolin. Finally, as a last resort I gave large doses of iodin as is done in case of exophthalmic goiter superimposed on adenomatous goiter, but this apparently only hastened the end. This convinced me, if there had been any previous doubt, that iodin hyperthyroidism is a distinct clinical entity, and that the best method of treatment is one of education and prevention.

Prophylaxis—In spite of repeated warnings to the medical profession of our state against the promiscuous use of iodin, I have observed as many as seven cases of iodin hyperthyroidism treated by a single physician. Although the attention of the health authorities has been called repeatedly to the large sale of so-called goiter remedies containing iodin, no effort has been made to check this, and these patent medicine concerns are still doing a thriving business. Many newspapers even today run in their columns these flagrant patent medicine advertisements including cures for goiter. One of our most prominent attorneys recently died a victim of such a "cure." There is still a reactionary element of the medical profession that is opposed to enlightening the people on questions pertaining to disease and particularly to its prevention, and it limits the scope of our efforts.

The fact that the incidence of iodin hyperthyroidism has apparently steadily decreased in our section of the country shows that our efforts have not been entirely in vain.

Fig. 3—Fatal case of iodin hyperthyroidism.

Iodin hyperthyroidism may occur frequently in children, exophthalmic goiter rarely, and toxic adenoma seldom, if ever. Toxic adenoma is gradual in its onset extending over a period of months and years. The average duration of onset is three years as contrasted with three months in iodin hyperthyroidism, but the acuteness and severity of symptoms observed in this disease are never seen in toxic adenoma. Two of the patients with iodin hyperthyroidism lost more than 50 pounds in two months. Toxic adenoma is characterized by secondary degenerative changes, hypertension, chronic myocarditis with auricular fibrillation, and chronic passive congestion. This is not true of iodin hyperthyroidism.

It is probably the generalized use of iodized salt in Michigan which suggested the subject of iodin hyperthyroidism for discussion. Wisconsin has not permitted the use of this method, preferring to administer to the school children each week a definite amount of iodin in tablet form, after the Swiss plan. It seems to me this is a more accurate way of administering iodin, although it is not as far-reaching. By the salt method some children undoubtedly receive a certain amount of iodin and others little or none. By the tablet plan one has at least a fair idea of how much iodin is received by each child. It has been said that there is considerable variance in the percentage of iodin contained in the different salts, although a standard is stipulated. Certain it is that there is little or no danger in giving iodized salt to children. The amount of iodin is probably insufficient in initiate hyperthyroidism even in the presence of adenoma. Whether or not this is true in adults remains to be determined. Although I have seen no true cases of iodin hyperthyroidism in adults that might be attributed to the use of iodized salt, I have seen persons in extremely run down condition that had been using it. Personally I can see no reason for administering any iodin to an adult for the prophylaxis of goiter since it is my opinion that all adenomatous goiters have their inception before the age of twenty-one. Pregnancy undoubtedly stimulates the thyroid and may be considered as an indication for iodin therapy, especially when the child is considered.

De Quervain[11] has said that the general prophylaxis by means of cooking salt, not to be harmful to goiter in adults, should be restricted to a minimum dose, even though it be insufficient for an infant already affected. The principal objection is the danger of hyperthyroidism or Graves' disease in the adult and also a harmful action on the other glands of the body. De Quervain[12] reported a series of 457 cases of iodin hyperthyroidism observed by Swiss physicians from 1922 to 1924. Iodized salt was a possible factor in eighteen of these.

In the report of the Swiss goiter commission at the International Congress last year it was suggested that in order to avoid the danger of iodin Basedow or iodin hyperthyroidism, promiscuous iodin treatment should be prevented. They recommended the giving of iodin in salt in an organically combined form and that the iodin dosage in the salt be reduced.

Other writers have called attention to the danger of using iodized salt. Kimball reported six cases and Hartsock sixteen. In your own state, Coller has warned against the use of iodin in adults with adenomatous goiter. I have seen no harm done to children from the use of iodized salt, but on the basis of my own experience with the use of iodin in several hundred children during the past six years, I question the good that may be accomplished. This problem cannot be solved at present, and I doubt if it can be for another decade or more. The use of iodin has not proved as satisfactory in my experience as has been claimed by many workers, and one wonders whether or not some other factor does not enter in, as for instance, infection. Certainly the great bulk of theoretical and practical evidence supports the theory of iodin deficiency, but I am not convinced that the clinical evidence is entirely in accord. I realize that the prophylaxis and the actual treatment of colloid or adolescent goiter appearing in children are two different questions. I believe I have proved to my own satisfaction that iodin alone in any amounts is not effective in the actual treatment of most goiters of this type, although some of the results appear to be excellent (Figs. 4 and 5). In the meantime, in the absence of a more effective means of treating the thousands of patients with early colloid goiter I am continuing to advocate iodin for the prevention of goiter. I seriously question whether the amount of iodin contained in salt will have any appreciable effect on this type which is so prevalent in the child of school age.

IODIN IN EXOPHTHALMIC GOITER

It is now generally recognized that iodin has proved a great boon not only to the

Fig. 4—Colloid goiter, before treatment with iodin.

patient, but to the surgeon in the successful treatment of exophthalmic goiter. We have been using it at the Jackson clinic since 1922 when Plummer first emphasized its importance. During the past four years only one ligation operation was performed, and this proved of no benefit. The stage operation has been abandoned because it is sometimes technically irksome, is a source of increased annoyance to the patient, and adds to the expense.

During this period of four years, more than 200 primary thyroidectomies have been performed at the clinic and in no case did death result from hyperthyroidism. In this respect it is important to note several points. First, the patient's confidence must be won. Then, it is important that the patient's condition should be as nearly ideal as is possible to attain. In the average early case in which the patient has not previously received iodin a period of preparation of from seven to ten days has been sufficient. In more advanced cases, or those in which there has been medication for a long time, a longer period may be required, but in no case have more than three weeks been required in our experience. I have always advocated large doses of iodin and for several years have used 60 drops or more a day. Patients admitted in a crisis are given several times this amount. Moreover, it is important that the administration of iodin be maintained continuously during and following operation. The method used in the clinic is to introduce the iodin by means of a duodenal tube which is usually passed the day preceding the operation[8]. This plan has proved of more benefit in the handling of these patients than anything else that I have tried except Lugol's solution itself. The post-operative reaction, nausea, vomiting, and tachycardia have been almost eliminated.

While iodin has proved of great benefit to the surgeon as an aid to the surgical treatment of this form of hyperthyroidism, it is a double-edged weapon for the physician. The almost immediate brilliant response to iodin of patients with exophthalmic goiter is a temptation to continue its use not only for weeks, but for months. It has been pointed out that although a marked change occurs in the pathology of the gland and a reversion from hyperplasia to colloid occurs, this change is never complete. In my early investigation it was possible to find isolated areas

Fig. 5—Same patient as in Fig. 4, after two years' treatment.

of hyperplasia in patients that had been on iodin for six months or longer[7]. Moreover, it was shown that the low-grade hyperthyroidism which persists causes myocardial degeneration. It is these cases that increase the surgeon's problems today. While some of these patients fail to respond to ordinary doses of iodin, they may be brought into condition for operation by greatly increasing for a week or two the usual dosage.

IODIN IN TOXIC ADENOMA

The use of iodin in toxic adenoma is still a debatable question. I was practically convinced that iodin was not beneficial in the majority of cases of this type, when I was surprised a few months ago to read a report from your state medical school that brilliant success had been attained with this method. While I believe this view is not in accord with that of most workers, I am at present not prepared to present sufficient data on this type of case. Of course, these workers reaffirm the view of the Crile-Graham school that toxic adenoma and exophthalmic goiter are synonymous. It should be recalled that adenoma is frequently associated with exophthalmic goiter and when the latter is superimposed on an old adenomatous goiter the beneficial effects of iodin should be attributed to the action on the exophthalmic goiter rather than the adenoma.

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IS PRENATAL CARE WORTH WHILE?

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Not so very long ago it was the rule rather than the exception for the expectant mother to visit her physician once, usually in the latter months of pregnancy, at which time the date of confinement would be estimated, the doctor's fee arranged; and then the physician would see no more of his patient until labor pains began. More recently people are beginning to demand prenatal care, and expectant mothers are visiting the doctor as soon as they believe themselves to be pregnant, and to continue their visits at regular intervals, until the baby has been born, and the metamorphosis or involution of the genital organs has taken place. A discussion of whether or not all this is worth while is the purpose of this paper.

OF WHAT DOES PRENATAL CARE CONSIST?

First of all, and perhaps most important, a careful history should be taken. This should include the patient's name, the date she presents herself for examination, her age, nationality, parity, and the date of her marriage. Usually the family history is relatively unimportant, but the patient should be questioned as to carcinoma or tuberculosis in the family. In her past personal history—rickets, scarlet fever, diphtheria, rheumatism, syphilis, gonorrhoea, pelvic disease, heart, lungs, kidneys and previous operations are especially important.

If a multipara, her previous obstetrical history should be obtained—was there vomiting, headaches, oedema, hemorrhage, eclampsia, or infection during her previous pregnancy? The number of children —were they full term or instrumental?— their weight and present age. Also have there been any miscarriages?

Next the menstrual history—time of first appearance, type, duration, pain, and date of the last period. From this the estimated date of confinement may be determined. As good a method as any is the customary method of counting back three months, and adding seven days.

At each visit the patient should be questioned as to vomiting, headaches, oedema, visual disturbances, regularity of bowels, and hemorrhage.

In private practice it is perhaps impossible to take a blood Wassermann on every

patient, but by careful, leading questions it is often possible to obtain information which would make one suspicious of syphilis. In all these cases Wassermann examination should be made. The importance of this will be referred to later.

PHYSICAL EXAMINATION

After the history a complete physical examination should be made, and in order to do this properly it is necessary that the patient remove all her clothing. This complete physical examination should be repeated just before confinement as very frequently changes have occurred since the original examination.

Also at this time a careful pelvic examination should be made, first of all to establish the diagnosis of pregnancy, and secondly to determine the presence or absence of abnormalities.

Pelvimetry should be an important part of this examination. The usual measurements which are taken include—interspinal, intercristal, intertrochanteric, external conjugate, diagonal conjugate, and bisischial diameters. All of these measurements are important to determine the type of the pelvis, and are also very interesting from an acedemic point of view. There are two diameters, however, more important than all the rest, and absolutely imperative if we are to do conscientious obstetrics. I refer to the diagonal conjugate, from which the true conjugate may be estimated, and to the bisischial diameters. A knowledge of these two diameters will detect the two most frequent types of contracted pelvis, which are the flat and funnel types. So much for the history and physical examination.

At this time the patient should be instructed in the "Hygiene of Pregnancy." This should include instruction as to the diet, cathartics, kidneys, exercise, coitus, bathing, dress, corset, and care of the teeth.

BLOOD PRESSURE READINGS AND URINE EXAMINATIONS

These two laboratory aids are so important that they deserve special mention. The blood pressure should be taken and the urine examined at every visit. In this way practically all of the toxemias will be detected early, and measures may be instituted for their control.

As soon as the foetus has become large enough, usually about the sixth month, the presentation, position, and posture of the child may be determined. In this way many abnormalities may be detected, such as breech, and transverse positions, and in a great many cases they may be corrected. Patients with lax abdominal walls and a marked obliquity of the uterus are instructed to lie on the side opposite the obliquity and this will perhaps lessen the number of abnormal presentations.

AVOID HYPEREMESIS

During the first trimester the most frequent complications encountered are: nausea and vomiting, which, if allowed to go on, may reach the stage of hyperemesis. Usually by instructing the patient to eat a diet high in carbohydrate value, and by increasing the methods of elimination this distressing factor may be controlled.

Second, hyperacidity, heart-burn or sour stomach. The administration of alkalies is usually sufficient to control this symptom. There is a new preparation, Alucol, an aluminum colloid, which is supposed to take in combination the excessive hydrochloric acid and release it slowly. I have used this in a few cases with good results.

During the first trimester is the most frequent period of abortion, up to the time of the complete attachment of the placenta. To minimize the occurrence of abortions—misplacements should be corrected, violent exercise avoided, coitus restricted, and most important of all, at the first sign of any blood the patient should go immediately to bed and stay there. I frequently give my patients a tablet of a quarter of a grain of morphia to be taken by mouth, at the first sign of blood, or the institution of any uterine cramps.

IF SYPHILIS BE SUSPECTED

Syphilis—as mentioned before, all suspicious patients should have a Wassermann taken, and if found to be positive, it should be repeated to allow for laboratory error and the possibility of mixed specimens. If positive on two occasions, intensive treatment should be immediately instituted. In this way many babies will go to term that would otherwise be born prematurely, and many babies will be born with no evidence of syphilis which otherwise would almost surely have been syphilitic.

It is in the latter part of the second trimester that the evidence of toxemia, as discovered by the blood pressure and urinalysis is usually detected. As a result of restricted diet and increased measures of elimination, few, if any of these should go on to convulsions or serious consequences.

CARDIAC DISEASE

With the enlargement of the uterus and resultant increased abdominal pressure the signs of cardiac disease usually begin to appear, if present. It would take too long to discuss the treatment of this condition, but it has been discussed in another paper printed in this Journal for April, 1928.

In the third trimester increased vigilance should be observed for toxemias and cardiac disease. At this time the patient should be instructed in the care of her breasts, the relief of pressure symptoms by a properly fitted corset; premature labor should be prevented, and abnormal positions should be recognized and corrected, if possible.

As was stated in the beginning, it is the purpose of this paper to discuss whether or not all this is worth while. An analysis of 1,000 consecutive cases studied in the Out Patient Obstetrical Clinic of the Long Island College Hospital shows the following:

1. 106 cases of contracted pelvis—	
Generally contracted	36
Flat	27
Funnel	43
2. Complications—	
Mitral Stenosis	4
Mitral Regurgitation	3
Syphilis	30
Toxemia	37
Placenta Praevia	2
Premature separation of the Placenta	2
Twins	4
Large Fibroids of the Uterus	3
3. Abnormal Presentations—	
Breech	27
Face and Brow	6
Transverse	4
Prolapsed Cord	2
Complex	1
4. Operative Cases—	
Forceps	22
Version	5
Introduction of Bag	4
Conversion of face to vertex	2
Perforation of after coming head	1
Caesarian Section	8
5. Maternal Morbidity and Mortality—	
Morbidity—	
Mastitis	7
Febrile Puerperium	59
Pneumonia	1
Mortality—	
Pneumonia	1
Puerperal Infection	3

INFANT MORTALITY

	Number	Per Cent
Stillbirths	19	1.9
Breech—large head	3	
Placenta praevia	1	
Accidental hemorrhage	2	
Toxemia	4	
Syphilis	1	
Full term—macerated	3	
Full term—not macerated	1	
Second twin macerated, first living	2	
Version—cord complication	1	
Full term—cord around neck	1	
Deaths of infants under 14 days	6	0.6
Acrania, died three hours	1	
Premature, died four days	1	
Full term, died one day (syphilis)	1	
Full term, died four days	2	
Umbilical hemorrhage	1	
Total	25	2.5

Was this worth while? I believe that the low maternal and foetal mortality—the low morbidity rate, the infrequent necessity for operative interference, and most of all, the satisfaction received from a job well done, make it the duty and privilege of everyone who practices obstetrics to do conscientious and careful prenatal work.

EARLY TREATMENT OF THE INSANE

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Without any special reading on the subject of insanity in ancient times, I was of the opinion that since the time when the slightest standard of behavior came into existence, there must have been departures from this, and ever since there has been a striving for betterment of social position, or physical conditions, there must have been a stress of living, and some must have endured, as a result of these strivings, a mental strain greater than they could bear without mental injury. If this striving for physical betterment or social position brought about war, defeat, destruction or loss of property, friends, and families, which it did, then there must have been those who failed to adjust their loss. As long ago as when man first loved—and this surely takes us into antiquity—he must have been frenzied by defeat in love or loss of the object of his love. All these situations make for loss of mental balance.

MAN'S AMBITIONS

It was early in the history of the race that the following characteristics of man developed: desire for leadership, desire for security, acquisitiveness, and to procreate. If these characteristics were as disastrous to mental balance then as they sometimes are in the present day, then before written history, insanity existed as we have it today. The effort to attain leadership or dominance over another person or people, entails a lot of stress, whether it is successful or not, and much more upon those, who in ancient times were dispoiled of home, family, or property. One might accept the above with the reservations that the mind not being so highly developed, would be less sensitive, and thus, less disturbed over defeat in those primitive urges of our being; or, that as the population of the world was less in ancient days, there would be less

stress and less insanity than now. I do not think that one could satisfactorily sustain such reservations. The answer to the first would be that even the lower forms of life are sensitive to interference with their environment even to self-destruction. In answering the second, you would have to consider the reason for the movement of large bodies of inhabitants of the earth before the days of written history. Was it not the stress of living conditions, more people and larger flocks than could be maintained in the homeland, and the consequent seeking out of more favorable environment? A glimpse of the difficulties of this search for pastures, is shown in the film and book appearing under the title "Grass". A pastoral people still with primitive habits of living, moving to green pastures under conditions that seem almost insuperable. The whole picture presents the appearance of an urge that is fundamental, such as that of self and race preservation. If the explanation given for the movements be true, then we can go a little further, and say that at all times, the relation between the number of people and the known world was about the same, and the position of those who had to hustle for their existence in ancient times was the same as now. They did not have as much then as now, for there was not as much to have. It is a truism, that any satisfying of needs only increases them. The relationship between the need and the satisfying of this need, on whatever plane we consider them, has been the same throughout the history of mankind, and in this relationship of desire and satisfaction comes a great part of the stress or conflict that results in mental break.

THE FIRST PHYSICIAN 4000 B. C.

The first physician of record in history is Elm Hetep. He lived in the third dynasty of Egypt before 4000 B. C., and became the medical divinity of the Egyptians much the same as Aesculapius did to the Greeks. One of his titles was Master of Secrets, and another, Bringer of Peace. After his death, he was represented as one to be venerated, and one of the pyramids was erected to his memory. He is represented in hieroglyphics as one who, if he could not cure, could console and inspire with courage, thus making incurable diseases more bearable. This is the first record of a man who, while he was a general physician, used his knowledge to relieve the mental state dependent upon an incurable disease. Might we not call him the first psychiatrist? Master of Secrets and Bringer of Peace is a fair ideal for a psychiatrist. If we may not name him a psychiatrist, then he was the forerunner of the type of physician who feels that to name the incurable disease and leave the patient in mental misery, is not the end of his work.

At this time, all knowledge of medicine being in the hands of the priest, many of the sick who could do so, came to the temples to be treated; and there is no question but that the priests were the psychiatrists —they were the sanitarium physicians of that day. It is interesting to note, that in that early day, sleep and dreams played a prominent part in diagnosis and therapy. Some writers, commenting on this fact, suggest that the sleep was not a natural one, which might come to the sick through their at last being in a place where their cure was sure, but that the sleep and dreams are strangely suggestive of hypnosis. One historian, speaking of the occurrence of this same thing in the Greek temples, suggests that the sleep was induced by the use of some gas known only to the priests. Whether these commentators are right or not, it remains a part of history that sleep and dreams were recognized as of importance in the care of the mentally sick. The Egyptians had some conception of dual or split personality, not with the hair-splitting refinement of today, but still strongly suggestive of what is taught today. They recognized the necessity of breaking the chain of gloomy thoughts of the melancholic.

APPEALING TO THE SENSES

Pinel writes of the temples of the Egyptians as being very beautiful places. Pinel does not give the authority for his description, but we would not accuse him of giving such a description without some authority for his statements. I am quoting from his description, "engaging their interest by powerful and continuous impressions upon their external senses." "Efforts of industry and of art, scenes of magnificence and grandeur, the varied pleasure of the senses and the imposing influences of a pompous and mysterious superstition." Beautiful paintings and images were everywhere exposed to view. Games and recreations of all kinds were used. Continuing the quotation, we have, "here enchanting songs and most melodious sounds took prisoner the captive senses." "Flower gardens and groves disposed with taste and art, invited them to refreshment

and salubrious exercise." Gaily decorated boats sometime "transported them to breathe, amidst rural concerts, the pure breezes of the Nile." Sometimes they were conveyed to its verdant isles where, under the symbol of some guardian deity, new and ingenuously contrived entertainments were prepared for their reception. Every moment was devoted to a system of diversified amusement, enhanced and sanctioned by superstition. An appropriate and scrupulously observed regimen was prescribed. Quoting again, "repeated excursions to holy places, preconceived tetes at different stages to excite and keep up their interest on the road, were in no small degree calculated to suspend the influence of pain, calm the inquietudes of a morbid mind, and to operate salutary changes in the various functions of the body." If these descriptions are true, what more could be desired for a setting for the care and cure of the mentally disabled? After thousands of years, nowhere in the world has such a reality been surpassed, or attained, or even conceived of, by the wildest idealism of any worker in this field. From this intriguing description of the Egyptian method of treating their insane, we must not conclude that force, restraint and torment were not present in ancient times. Nothing could be further from the truth than to suppose that such an idealism existed without its antithesis, chains and brutality. Chaining, beating and tormenting the patients to cause the evil spirits to depart, was common practice.

SAUL SEIZED WITH MADNESS

Among the earliest, perhaps the earliest definite case history of insanity, was that of Saul, king of Israel, who was seized with madness, probably a maniac depressive case, or one of parania with maniacal outbreaks accompanied by homicidal tendencies. A notable feature in this case history, is the employment of music in the treatment of Saul's mental affliction. This was a very definite employment, for it says that David was an accomplished player, and the one, suggesting David being brought to Saul, states it was done because of the possible influence of music upon his madness. It is recorded that it's first effect was beneficial, but afterwards, not so. This would indicate that at 2000 B. C., the recognition and treatment of insanity was not a new thing among the Israelites. Saul, who had been a sheep herder in his boyhood, was made the first king of Israel by Samuel. The Israelites were not used to a king, nor had Saul any precedent for his guidance. This made his task difficult. He was a successful warrior and usually defeated his enemies in battles. One day the Phillistines appeared in battle array. Among their numbers was a giant, who went every day into no-man's land and challenged the best of Saul's army to combat. No one dared to accept his challenge, and the Israelites, including Saul, acquired what would be known today as an inferiority complex. They could not harmonize their faith in the God of Israel with their fear of Goliath. Failure to rationalize is a step toward insanity. David, a young sheep herder, with his sling and stone solved the difficulty by killing Goliath, and in their joy of being relieved of the difficult situation, they acclaimed David a hero. They shouted in song, "Saul has killed his thousand, but David his ten thousand." Now this did not please Saul, so he withdrew to his tent to brood over his discomfitures. The song became very popular, and Saul heard it on every hand, which increased his hatred, and he planned the death of David. Love of the people for David made this a difficult undertaking.

SAUL SULKS IN HIS TENT

In the meantime, his son, Jonathan, became a fast friend of David, and David became Saul's son-in-law, which again complicated the situation. The fact that he was popular and his son-in-law, made Saul fear that the people would make David king. There was no ground for this fear, but it added to Saul's mental disturbance, and his periods of withdrawal from his people and isolating himself in his tent came more often. Every move David made was interpreted as antagonistic to Saul and his house. His behavior in the tent and in the presence of his people, and his attitude towards David and other of his friends, became a scandal in Israel and his people declared him mad. The prophet Samuel contributed to his mental condition by telling him the Lord had withdrawn his favor. In all this turmoil he lost his ability as a warrior, and in one of the battles with the Phillistines he was sorely wounded, and seeing the battle going against him, he committed suicide. I have gone into this case history at some length, for I am quite sure that, although three million copies of it are published every year, not many of you have read it since you began the study of medicine.

AN ANCIENT AGROMANIAC

Another case that comes to my mind from my boyhood reading, is that of Nebuchadnezzar, king of Babylon, who appears to have been an agromaniac. He said that he was king of all nations and races, and all languages that dwell in the earth. This would suggest to us that he had delusions of grandeur. He was given to visions and dreams. He is quoted as saying repeatedly, "The thoughts upon my bed and the visions of my head trouble me." He had one dream that disturbed him more than the rest, and he called the wise men of the Chaldeans to interpret this dream, but they were unable to do so. Finally he called Daniel (the ancient Freud), and told him the dream which had been troubling him so much, and it is reported that Daniel was astonished for the period of an hour. (That was very clever of Daniel, for if you will read this case history, and I refer you to the original text for it, you will see that the interpretation was very simple and that Daniel needed that hour to gain courage to tell Nebuchadnezzar). Daniel's interpretation of the dream was, that it was a message from the Most High, and that the Most High was saying that Nebuchadnezzar should be driven away from man and that he should dwell with the beasts of the field. And it came to pass that Nebuchadnezzar was driven out and spent seven years in the fields, "eating grass as oxen and his body was wet with the dew from heaven till his hairs were grown like eagle's feathers and his nails like bird's claws." This is a pretty fair description of the actions and appearance of an insane man. It is reported that Nebuchadnezzar recovered his sanity after ten years.

In sacred history many cases of insanity are recorded, and where they are written up as the cases of Saul and Nebuchadnezzar, they are good reading from the psychiatric point of view. In fact, I think the Bible could be recognized as a good text book for those interested in the cause and prevention of insanity or for those who are interested in mental hygiene.

THE CONTRIBUTION OF THE GREEKS

The Greeks, Assyrians and the Romans made use of their temples dedicated to gods of medicine in the same way as the Egyptians and derived much of their treatment from the same source. Some of these later temples were built on a magnificent scale. The one dedicated to Aesculapius contained baths, places for exercise, music and mystic rites, and have their counterpart in the present day sanitariums; but nowhere do we find them described in such glowing terms, as used by Pinel in his description of the earlier Egyptian temple. We could spend a whole evening studying the cases that appear in Grecian poetry. Homer writes of insanity as if he were familiar with the different manifestations, as when Ajax, smarting and brooding over Ulysses being awarded the arms of the dead Achilles, killed his own cattle, thinking they were the sons of Ulysses, and had no remembrance of the fact, when he saw them lying dead before his tent in the morning. The history of the Romans and of the Greeks and their mythologies are full of suicides while insane, and of insanity caused from defeat in love and war, and of the insanity caused by the angry gods, Bacchus in particular. In fact, at this time it appears that insanity was not uncommon, and also that the causes were very similar to those which operate today. Albamas, king of Thebes, pretended his wife was insane, in order that he might marry Ino. He became insane—his delusion being that Ino was a lion. Ino, herself, was really insane and destroyed her own children. There is a mix-up in family affairs that would furnish some headliners had it happened today.

In Cambyses, king of Persia, we have a fair description of dementia praecox, or epilepsy, ending in death; and in that of Cleomenes, king of Sparta, one of alcoholic mania. The Spartans attributed Cleomanes' downfall to bad company. A group of Scythian merchants visited his capital and taught him to mix his drinks, and from this cause he became mad. The quality of his liquor must have been bad, but it is recorded that he committed suicide rather than go without it.

HIPPOCRATES RECOGNIZED MENTAL DISEASE

Hippocrates well understood the part that the stress of living has upon the mind. He distinguished between melancholia, mania, and senile dementia. In his books he did not write at any great length on mental disease, but what he said was good. There is much more in the works ascribed to him, that is not authentic. He recommended that the melancholic should lead a tranquil, quiet life. The absence of all excesses, sobriety, a vegetable diet, food but little seasoned, continence, exercise short of fatigue, and no sunlight was the treatment he prescribed. When it

comes to the part medicine might play in the relief of patients, the treatment has not the same appeal to modern judgment. He prescribed helebore and bleeding.

In summing up psychiatry among the ancients, the cause of insanity was often the anger of their gods. In modern thought and expression, this would be stated as their inability to rationalize their behavior, or their inability to suffer the consequence of violation of established customs and rules of conduct, which so often in their day had the authority of "thus saith the Lord" or its equivalent. Among other causes might be added the stress of living, and the failure to acquire that which they greatly desired. The treatment, since earliest history, had in it methods which have a strong appeal to us today, as well as that which we read only to condemn. This is probably shown best by the writings of Celsus and Celius Aurelianus. Celsus was born in 30 B. C. From the title of his work on the insane, "De Tribus Insanie Generibus", we might fairly conclude that he thought himself broadly informed. He says of the insane, that discoursing as if sane, is an evidence of insanity; and also, that those who ramble in their discourse have a form of insanity; but that they, along with those who attempt trifling injury with their hands, do not need rough measures. (This was comforting to the essayist). Those who are more violent must have their audacity coersed by blows. Excessive mirth must be checked by scolding. Torment may be resorted to such as hunger, pain or flogging; and by such treatment, through fear, the patient will do as they are asked. Sudden startling, such as informing them of lost wealth, was good treatment. He advises care about accepting their offer of submission, because they may be deceiving you.

KNOWLEDGE GROWS MORE ACCURATE

In Celsus Aurelanius we get a picture, supplementary and considerably different from that of Celsus. It is not known just when he lived, but somewhere in the first century, along toward the end. One historian suggests that he was a contemporary of Galen, basing his opinion upon the fact that Galen does not mention him. His discourse on the care of the insane is the most complete that I have read. He regards a room on the ground floor, moderately light and warm, as being absolutely necessary. The windows should be so placed that the patient could not hurt himself by jumping from them. A comfortable bed should be in the room and if the patient is in danger of hurting himself, he advised padding the patient with soft wool instead of padding the walls. The attendants should be in sufficient number to prevent escape, and should have the judgment not to confirm a delusion by agreeing too readily with the patient, or to exasperate him by disagreeing. In no case does he permit chaining. Should the patient's eyes be affected by light, they should be shaded, but not in a manner to deprive the rest of the body of sunlight. In regard to diet, he did not carry his feeding any further than just enough to induce hunger—the food to be light and digestible. He suggests that there be alternate days of fasting and feeding, and advised cupping of the head and shoulders. Sleeplessness he relieved by carrying the patient about on a litter or chair, or by the sound of running water. He was mildly a hydrotherapist. He prescribed riding and walking as the patient improved. The patient was to read compositions containing inaccuracies in order to develop attention and concentration (a form of the present day Terman test). The compositions were to be within the understanding of the patient and not too difficult. Theatrical entertainments were provided for the melancholy, and solemn scenes for the hilarious. Conversation was always to be conducted in a low tone of voice, and of an encouraging or amusing nature. In these conversations the attendant would have regard for the previous occupation of the patient, with the hope of renewing interest in life. Any mental exercise was to be followed by rubbing with oil and a short slow walk. Shampooing and friction of the head was considered quite important. Wine was forbidden until after health was restored. If the patient had sufficiently recovered, he was permitted to attend the disputations of the philosophers, in the hope that he would be persuaded, through an interest, to forget his grief, fear, or anger. Finally, the cure of the patient was to be established by traveling and sea voyages. He condemns confining in a dark room, too much seclusion, and the omission of ordinary occupations; and he denounces extreme abstinences, saying that if those who prescribed them practised them, they would find that the effect of hunger upon themselves would be to induce rage. He does not hesitate to assert that starving will induce madness, rather than cure it. Bucknell, in writing of Celius' attitude

toward chains and whipping, states that his observations are of special interest to us at this time. He condemned their use and observes that a more proper procedure would be to employ more attendants. He adds that stripes and flagulations only induce sores. The returning consciousness of the patient should not be hurt by the sense of his wounds. In his writings he reviews the teachings of others, and condemns the extensive use of hydropathic measures, bleeding to extreme, or the use of clysters, of alcohol, of music without sufficient discrimination, and apparently anything that disturbs the emotions. He certainly had a humane attitude towards the insane that we have but recently reattained.

In the writings of Celsus and Celius, you will discover a rationalism that seems to be born of their own experience and in keeping with their philosophy. Celsus, rather hard-boiled, clung to traditional methods. He had a little of the attitude that the insane are something apart from the sane. The other man was kindly, humane, and not less, but more scientific.

Galen offers very little that is of interest to us. He regarded insanity as the opposite of wisdom. He thought that certain foods, such as meat from different animals, would produce insanity. Some he bled, and others he did not.

Before leaving the consideration of the ancient methods and entering upon that of the medieval period, it is well to consider exorcism. It was a means devised by man to neutralize the effect of their belief in the power of their gods to visit insanity upon them. It has effected ancient, mediaeval, and modern treatment of the insane. Ever since man first postulated a wrathy god as a source of the phenomena of nature that he could not understand, and with which he could not cope, he has tried to influence his gods by peace offerings and rites of submission and abasement. If today we believed that the insane were possessed of the devil, we would believe in exorcism as a very rational procedure; but we do not so believe, and as physicians are quick to condemn this rite because of its lack of truth; yet the world is not entirely rid of exorcism. Many people still hold to it in a mild degree and practice the rite. In fairness it can be said, that a strong belief in that which has not even a semblance of truth in it, can be made to, and does operate, for the good of the one who believes. C. McFie Campbell recently wrote a little book, "Belief and Delusions", in which he brings out the point, that much of our misery is dependent upon beliefs and delusions. As an example of this, he gives the story of a Japanese mother whose child died and for whom she grieved greatly. The priests of her religion have a rite that they believe will bring the dead back. The mother consulted the priest, and when he heard the story of her affliction, he proceeded to invoke the power that would accomplish what the mother wished. In the presence of the mother, he talked with the child in a low voice, which in all probability the mother in her excitement accepted as the voice of her child. The child told the mother through the priest that she must not weep, because the river, which the dead must pass over, was so swollen by mothers' tears that it could not be crossed. The spirit of the child had to wander in space until the mother could dry her tears. We can easily believe that the mother ceased her weeping, and in her new interest was relieved of her great sorrow, as the story states. Here is an example of believing in something that we could not accept as true; in fact, it is wholly based upon error and superstition; yet it operated for the good of the one who possessed it. So may it not have been, that these people we have been considering, believing that their mental derangements were visitation of their gods, or a possession by evil spirits, very naturally and with good judgment developed the practice of exorcism; and in the treatment of the milder psychopathies, they received a benefit from it. In our judging of these matters it is hard for us to divest ourselves of an attitude which is the result of the comparatively recent tremendous increase of our knowledge of natural phenomena.

THE CASTING OUT OF DEVILS

In this connection let us, too, consider the position of the Christian church. The early Christians embodied in their knowledge the value of exorcism. All the world believed in it, and nothing in the history of the church, or the teaching of its founders, would lead one to think that they opposed it. In fact, the church was in distinctly the opposite position. Christ cast out devils, and there still exists in the church in a mild way, the exorcism of the evil spirits; but that the church was responsible for the establishment or development of this rite, is of course not so. Two thousand years before the founding of the church, Solomon was an expert

exorcist. What would be more natural than that the early Christians, believing it themselves, and going out among people who were firmly grounded in a similar belief, would try their hand at exorcism. Their faith in their Master being young and strong and always ready for a combat with the evil one, it, no doubt, carried them to extremes; but no more so than the religion and philosophy of the ancients.

We have to look farther than demonology and the rite of exorcism for the whole cause of the falling away in the interest in the insane during the dark period of the history of Europe. With the fall of the Roman empire, it seemed as if the very props had gone out from under society, and there was great confusion everywhere. History has recently repeated itself in this particular. Interest in other things than the understanding of the insane was lost and it took a great many years, centuries, for man to recover this interest, even to the measure of that possessed by the Romans.

INSANE IN THE MIDDLE AGES

In the medieval period, the mildly insane roamed the country and existed as best they could. It is likely that most of the witches, hermits and holy men belonged to this class. The insane of the wealthy families were cared for in their homes. The monks began to take the insane into the monasteries to care for them. This service, no doubt, beginning with high purpose, degenerated to the point where they were forbidden to receive them. To England belongs, as far as we know, the credit of setting apart the first public building for the housing and care of the insane in Europe—Bethlem, or Bedlam, as it became known. This place became an abomination to the English people and, when one reads of the treatment of the insane as practised there, you are convinced that psychiatry, or the care and prevention of the insane in medieval time, had dropped to an extremely low level. In fact, during the entire history of the medieval period and up to Pinel's work, there is not much to contemplate with any pleasure. While we get this impression, we know that nothing is utterly bad, or that evil exists alone; and as a matter of fact, all through this period there were many who were kindly disposed toward the insane, but they found themselves helpless to change the general conditions. There were individuals in England and France who preached the gospel of kindness, but for a long time they were much like the "voice of one crying in the wilderness". Quakers in both England and America were the first organized body to recognize the situation, and to apply themselves to correcting it. The French government, in response to agitation, and with serious misgivings, granted Pinel the authority to remove the chains. The effect of this upon the insane so supported Pinel's contentions and awakened interest, that from that time on all the world slowly changed their attitude toward the problem.

EARLY FUNDAMENTALIST THERAPY

I have not spoken of the part that America has played in the latter part of the period just ended; but, lest we be too severe in our criticism of Europe, it is well to remember that we were in this picture, and that we did not lend any beauty to it. As I read history, we are guilty of all the excesses chargeable to others, and we did not change because of our good judgment. It reads as if we were persuaded against our judgment by the strenuous efforts of a few ardent workers who, in season and out of season, preached a more humane treatment of the insane than obtained in America. As we read the theology of our early fathers, as expounded by their outstanding divines, who were also their leaders in other life interests, we will discover about as dour a philosophy of life as could be conceived of. Their religion was based upon the repression of normal emotions—they constantly presented to the people the utter worthlessness of man and of human effort, and held up to their mental vision the spectacle of sizzling in hell fire if they did not conform to their teachings. All that we know about the beliefs and worship of the pagan gods of Egypt, Greece, or Rome, is no worse, and in fact much pleasanter to contemplate than the beliefs of our early fathers. I bring this up, not to open a discussion of religions, but only because it is related to the subject under discussion. Some of the preachings of Jonathan Edwards are the ravings of an insane man. Cotton Mather, who was a preacher of the gospel of that day, says, "in New England where splenetic maladies are prevailing and pernicious, pious people have developed melancholy indispositions. These are the unsearchable judgments of God." There is no need to blame either New England or God after reading the gentleman's own contribution to the cause of melancholia. This preaching and this attitude toward life surely in-

fluenced the treatment of the insane—the treatment naturally being more ecclesiastical than medical. If exorcism through prayer failed, prison, chains and stocks were tried. Public opinion permitted and urged the civil authorities to burn at the stake those who without doubt were either feeble-minded or insane.

THE WORK OF RUSH

In 1751 Pennsylvania built its first hospital and some insane were received there. Here we should be able to find the most enlightened care of that period, but it is recorded that those who made any trouble were chained in rooms in the basement of the hospital. Calomel and bleeding was the medical treatment. Benjamin Rush, an attending physician and one of the greatest of our early clinicians, made his study in this hospital that resulted in his book, "The Mind". He had no better remedies to offer. He was broadly informed, had a kindly disposition, and had studied in Europe. He was interested in the care and treatment of the insane, and had made original observations that marked him as an outstanding man in the medical world; yet, he suggested punishment with fists and even with a whip. In fairness to him, let us say that he mentions these only as a last resort and then to be used in moderation. As I read this, my impression was that he could not break entirely with traditional methods. He did not approve or he did not frankly condemn.

Hospitals for the insane began to appear with very little general improvement in the care of the patients. It depended on the personality of the man in control as to how humanely the patients were treated. There was no public opinion to insist upon better treatment. As to medical treatment, they received what was in general use at any given time, just as Rush used calomel and bleeding.

One has only to consider the conditions that give rise to such movements as Christian Science, Osteopathy, or better still, the salutary effect of Homeopathy, to have a just appreciation of how frozen we can become. Who knows but that we would still be using heroic doses and bleeding for almost everything, had it not been for the influence of these movements—not on us, but on public opinion. I, personally, do not think that our present interest in mental diseases, or in the use of physical therapy, would have been so great, nor would the present high standing of psychiatry have been attained as quickly, had it not been for the push that these stepchildren of medicine have given us. W. A. White says that modern psychiatry began twenty years ago. This date corresponds with the date of some of these pushes to which I refer. I am not going to go into detail in regard to the advances in psychiatry during the later years. That belongs to another subject. Suffice to say, psychiatry is today attaining a high standard and our mentally diseased patients are cared for humanely throughout the whole United States and the modern thought of the world is being brought to bear upon the problem of the prevention, care and treatment of mental diseases. For those who cannot remain in the community, the government supplies hospitals equal to those of any other place.

In conclusion, I believe that:

1. Insanity is as old as the race, and existed long before written history.
2. In the Greek and Roman civilizations, the treatment of insanity was in accord with the general knowledge of the times and in the main was humane. The Roman code was the first legal recognition of their rights as citizens.
3. The fall of the Roman empire was in a large part responsible for the condition of the insane during the medieval period. This was to be expected, for it was through its widespread activities that current information was spread, and education carried to remote places.
4. The belief that gods, devils and evil spirits were causes of insanity, has run through all history and has influenced the treatment, in the main, for the bad.
5. Greater advance has been made in the last twenty-five years in understanding the underlying causes of insanity than in all time since the world began.
6. Psychiatry has broadened its field of influence and usefulness, so that in almost all of the activities of man its guidance is sought. It is finding itself and its place.

INSULTS IN SURGERY

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A scene in the operating room of Bellevue Hospital in 1876. Three men in the nude; two on chairs, one on the operating table. Instruments spread around on the

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shelf by the lower tier of students for them to handle. Patient on the table held down by four strong men. Without anesthesia, the operator plunges a knife into the hip joint. Patient howls and squirms, filling the amphitheatre with his groans. The waiting patients faint, fall off the chairs onto the floor. Men go to them, grab them by the heels, jump on the chairs, invert them, bring them to, put them back and the operation proceeds. The two waiting men naturally in a state of fright, knowing what was soon to happen to them.

Ten years later, a patient placed on the operating table. Four strong men put alongside. An anesthetic, the most incompetent man who could be found, ourself, given a cone in which had been placed some lint saturated with ether. We were expected to push this over the face, hold it down by grabbing the ears, and have the patient under in two minutes. Sometimes the adrenals would be so stimulated that the man would break away and then we would have the run of our life.

In the present day, the abdomen is the most commonly attacked by surgery. A sufficient incision is made because the operator must not be discommoded. He must have a comfortable approach, must have a wide open exposure to be enabled to see things. There is complete relaxation under ether, yet retractors are introduced. They do not want to stay in place and keep shifting and rubbing the peritoneum. The surgeon enters with his hands and instruments, makes a little cut, followed by the assistant with a gauze mop, and then for half an hour or more it is a game of "me first, you next" between the surgeon and the assistant, punching away at a viscera that has never known anything but gentleness. The operation over, the hand and arm are passed all through the abdomen, because some one once said that the spleen should always be investigated as there might be something the matter with it. Much of surgery is as automatic as the etiquette of Louis XIV.

It is quite likely that if the tissues and the cells of the body could voice their sentiments they would call this procedure brutal and the surgeon a brute, but man is essentially such and in the recapitulation of things, looking back, we see the child pulling off the grasshopper's legs and watching him crawl; the farm lad putting a chicken on the stove and seeing it dance; the boy in the city tying a can to the dog's tail and watching him run.

The barbaric instincts are not very deeply buried by the culture as may have come to us. Early pre-anesthetic surgery demanded rapidity. A patient under ether seems to be unconscious, but the upper centres only are numbed. The remainder are not and the true physiological mind is awake and greatly disturbed. The brain is but the organ of expression for the body and if not allowed to express itself externally, joins the other viscera mightily for self-protection.

There has been a fight for life from the earliest ages and physiologically we are full of fight today. Each organ and each cell will retaliate for its existence. In this least protected part, the abdomen, the reaction is great and most varied. Cattle-horns or surgeon, it is all the same. To the viscera and to each cell of the economy surgery is an insult and the surgeon cruel.

Ether was discovered in 1819, but was slow to be appreciated. The oldtime doctor did not want to change his methods. Another reason was that for a number of years, the chemist was unable to give out the pure article. Even in the '90's it not infrequently happened that within twelve hours the patient would die of acute suffocative edema, bloody froth exuding from the nose and mouth.

Early surgery was occupied with the cutting down of mortality, for when it began, (which, comparatively speaking, was only some thirty years ago), the death-rate was alarming. Rude and crude we were, entering upon an unknown land, well befogged with ignorance and superstition. As we progressed, improved and eliminated the non-essentials and trained ourselves to better work through broader, deeper knowledge of the fundamentals of physiology and anatomy, the mortality dropped so that now the death rate is at a low limit.

Mortality reduced to a fair minimum, morbidity caught the attention of the profession. Records were taken and published of how long the patient was in bed, how long in the hospital, while little, if any, thought has been given in the statistics of association meetings to the comfort of the patient. It is time now, we feel, with all the large problems in technic settled, that we should think more of comfort, that we should look upon our work as an insult to cell and tissue and endeavor in every way possible to minimize the same and strive through a cultured attention to bring about tissue happiness. Two men have stood out in the limelight as disciples of this thought in determining psychologi-

cal and physiological reactions—Moynihan and Crile.

It is in surgery as it is in everyday life. Little things disturb the most. As it is the little kindnesses which are the greater appreciated, so in surgery the giving of thought to minute matters of detail add materially to the comfort of the patient.

It is a very difficult proposition to modify a person's religion. It is an equally difficult one to influence the average surgeon to alter his methods when his patients are not dying off nor suffering from serious complications.

No physician ever cured an acute disease. Nature instituted the recovery, aided by a good nurse or perhaps a competent midwife. The greatest aid that has come to the modern surgeon is the nurse, who by her presence, manner, tactfulness and help encourages nature in her work. Midwives have a better record than the obstetricians, perhaps, because they are more apt to let nature cure herself.

Canute could not stem the tide, nor can the practitioner prevent nature from following out her varied methods. Back in the beginning, as far off in history as the furthest star is in space, there was attack and danger. The primordial protoplasm had its troubles. Then there gradually developed a method of self-treatment, an enzymic action. Long before there was any nervous system there was a similitude of endocrine function and white cell activity. All physiological properties of the endocrines seemed to be massed into one activity and the fluid content in lower life teemed with white-cells which apparently acted very much as our white cells do.

Every surgeon who wishes to be competent, to excel and to possess a master mind in his work, (the desire of us all), must be a physiologist at heart. He must know physiology and be able to apply it accurately in the interest of the patient during the period preceding the attack, as well as after. Any other type is but an operator, an automaton. One great advantage of this knowledge is that it will offset the prevailing tendency to rely upon the different types of laboratories for reports, a sin which is gaining too great a headway. Not but that they have their value, but a thorough knowledge of symptoms and signs of disease processes explained through action and interaction of tissues is by far to be preferred. Our best thought and our best books in the profession largely antedate laboratory work.

It is still a plan, and one only too often practised, for a patient to be admitted to a hospital on an afternoon and operated upon the following morning, sometimes with preliminary purging, other times an enema. The commonest anesthetic is ether, more or less properly given. After that comes the scalpel. All this is a demand upon the vital forces, which can be epitomized in physiological terms so that they may be better understood, for we must get away from old-fashioned nomenclature.

It has been well established by clinical experience, experiments and biopsical and pathological observation that as the liver is, so is convalescence. For many years we have noted the appearance of the liver and connected it up with the after-fight and recovery. Physiology tells us that recovery from all illnesses, whether microbic or operative trauma, is in proportion to the activity of the chromaffin substance and the amount of glycogen stored in the liver.

A person hurried into a hospital and up to the operating room is bound to have an annoyed mind, bothered with home and business worries, strange conditions and uncertainty as to the future, all of which are disturbing, and take from the glycogen reserve of the liver. Lack of proper rest and sleep withdraws from the chromaffin substance, particularly the adrenal. To be fair to the patient, to give him a chance to fortify himself physiologically and psychologically, not less than two days should elapse before the surgeon begins his work. Recumbency and rest take off a little from the heart strain, allow it to become a trifle smaller and stronger, and fortifies the circulation. Carbohydrate diet, which always contains a certain amount of protein, should be established. In lieu of that, a tumblerful every four hours or oftener of 10 per cent glucose and lemon, (the oxymel of the Ancients), should be administered and every effort made to forestall dehydration. To load up the liver to its full capacity of glycogen (which is 17 per cent in man), and through sleep add to the efficiency of the chromaffin substance. Sleep is the only thing which will bring the chromaffin tissue back to its normal activity. There is no drug or other treatment known. A few days in an "optimistic" hospital, becoming accustomed to sounds and strange conditions will allow the patient's mind to calm down and sleep to come. A patient who has slept and rested well and taken plentifully of carbohydrate diet and glucose drinks is in the best condition for the work to follow.

The profession is trying to break away from ether, but as yet there are not enough experts with gas-oxygen to make that method a safe one to employ universally. The local application of procaine also requires expert administration by a man whose mind is adapted to such a procedure. We are still compelled to depend in large part upon ether, and although ether anesthesia is a tonic and does not depress the blood tension during an operation of ordinary length, it does allow a certain amount of glycogen to be taken from the liver. Ether takes away consciousness, that is, it acts upon the intellectual centres, but has no material effect in protecting the lower centres. As a result, every cut, every touch, every drag is as much a pain and distress to the patient as if he could groan and complain as in the pre-anesthetic days.

The peritoneum is super-sensitive. Touching or running the hand under it, putting in retractors to make better access so that the surgeon may be comfortable in his work, send a reflex effect upwards into the sympathetic. Gauze packing is another grievous affront in our technic. It is very common to see a wound packed voluminously and forcibly with wet gauzes, treating the contents of the abdomen as if a grudge was held against them. Sometimes this is absolutely necessary, but many times it is not. The hand and the instruments then go in and altogether too often the assistant mops and mops. It is blow after blow. Cells and tissues are tortured and tormented. They speak not with the voice, but later demonstrate themselves in reaction.

The organs of the abdomen are essentially reptilian. They are not active under the presence of oxygen, but are so in the presence of carbonic acid gas. The liver cells must be soaked with carbonized blood. The amount of oxygen going in by the hepatic artery is largely taken up, apparently, by the parenchyma. In the stomach and small intestines nature has provided the veins with certain valves at the exit to retard the outward flow so that the nerve-net and the involuntary muscles are bathed with more carbonic acid than most of the body tissues.

On opening the abdomen it is observed that the intestines are bluish in appearance and smaller in calibre. After a few minutes' exposure they balloon and become pink because of the evaporation of carbonic acid through the peritoneum. This red-blood oxygen passes up to the liver and the liver cells have brought to them that which they had before, oxygen. What the effect is has not, as yet, been demonstrated. but our surmise is that it must interfere with their normal function. At any rate, during the operation and during all the time these atrocities are being perpetrated (if we may use the term), more glycogen is being eliminated to enable the sympathetic, that is, the adrenal, to combat the onslaught as best it can.

The first province of the sympathetic is to promptly produce a stasis. Auscultation of the abdomen before an operation will elicit the usual sounds, but when an abdomen is opened not an intestine is seen in motion. Everything has quieted down, for the sympathetic inhibits activity through the nerve-net.

The pneumogastric is a nerve of motion, but when irritated sends an impulse to the brain which comes back to the sympathetic and facilitates its action. If the glycogen has been brought down to a minimum and the patient has not had sufficient rest, each cell of the body, particularly those in the cranial cavity, will have an inbalance in their acid-alkaline relation and cell acidosis is produced. Nausea, vomiting, insomnia, restlessness and general body discomfort are all the result of want of care as to the needs of the body cells.

An open abdomen is deleterious in another way, in a lowering of the temperature of the visceral circulation, particularly that of the liver, which works at a somewhat higher temperature than that of the rest of the body. To cool it down materially is to interfere with its action, and, if the supposition be correct, that there is a hormone made in its substance necessary for the vitalization of the cerebral cells, a chilling even to a slight degree carries serious dangers in certain types of people.

Our experience of 1876, which was loudly protested against as we left the amphitheatre, was horrible to the onlooker, but the beautifully towelled operation of today may be quite as rude to the all unconscious patient.

The lesson to be learned through physiological thought is that to be well vitalized the chromosomes (particularly those in the brain, liver, adrenals, and thyroid) should sleep. Sleep is their only restorer and it should be had plentifully, thereby establishing their greatest potentiality. Recumbent rest should be given to restore circulation and strengthen the heart, and a diet instituted which will send glycogen

to the liver and anchor it here—carbohydrate with a moderate amount of proteid. Lastly, and firstly, extreme gentleness in all manipulations should be employed. This can not be taught, but must be learned through experience with the mind centered in the intrinsic tendencies and needs of cells and tissues. To defy nature is to invite disaster.

IMPRESSIONS OF HAVANA PUBLIC HEALTH SERVICE AND HOSPITALS

WALTER J. CREE, M. D.

DETROIT, MICHIGAN

For a number of years I have spent a couple of months during the winter in Havana, Cuba, usually from the middle of January until the first of April, and have found it an ideal place for rest and recreation. In the Detroit Free Press of April 14th, 1928, there is a short article written by George Matthew Adams and he says: "Havana is one of the most interesting cities these eyes have ever seen; there isn't a city in all America so clean." He said other fine things about the city, but I have quoted enough. Aristides Agramonte, M. D., Sc. D., Professor at the University of Havana, and formerly secretary of Public Health and Charities, speaks of Havana as a wonderful health resort, especially during the winter months. The doctor was a co-worker in the fight against yellow fever in Cuba and the only one living. Doctors Reed, Lazear and Major Carroll are dead, but the great benefits following the work of these men are inestimable.

I am told that the summer months are not bad, as the nights are always cool. In the sun it is hot, but in the shade it is comfortable. And the city is fanned by the ocean breezes.

Cuba is noted for the absence of diseases that are peculiar to tropical countries. Yellow fever and small pox are practically extinct. Typhus fever and sleeping sickness are unknown. The Health Department put on an educational program for the benefit of the people. Scientific facts are published in the daily papers and there is a monthly publication dealing with health affairs, a procedure which has been of great benefit.

Some of the theater programs carry short lessons of health to the people, advising them as to sanitary conditions, the simple treatment of minor complaints from a prophylactic standpoint, and a continual reminder "not to delay, but send for your doctor." This, in combination with fresh air and sunshine—and there is plenty of both—tends to make a city in which life is worth living. Only a few years ago I recall a threatened epidemic of typhoid which was nipped in the bud by compulsory vaccination.

All food handlers, cooks, waiters, barbers and bartenders are examined at stated intervals and woe betide the worker who fails to come up for his examination. If sickness occurs to the help, the proprietor must report the case. Barber shops are equipped with sanitary appliances, not only in Havana, but in all the small towns I have visited. The people wear light clothing and bathe frequently, which is also conducive to good health.

The collection of garbage is very thorough and daily. Large vans announce their coming by a well known blast of horns and the receptacles are speedily placed in front of the premises and quickly placed in the vans. Small amounts are wrapped in paper. A crew of eight men do the work rapidly, but with some noise. These vans drive to a loading dock on the bay, the garbage is deposited on scows, which are towed out into the ocean and dumped. The streets are very clean, scraps of paper are rarely seen, and much of this is due to the educational campaign. All theater programs, circulars and other advertising matter have printed prominently a request not to throw this paper on the street. *"Ciudadanos! Ayudenos en nuestra labor de conservar la limpieza de la ciudad. No arrojando este programa en la via publica"* —(Citizens! Help us in our work to preserve the cleanliness of the city. Do not throw this program in the street.)

Drug stores are under supervision of the Sanitary Department and must conform to certain regulations. The store must be in a sanitary condition, maintain a supply of medicines and surgical equipment for emergency use. Some months ago a few of the stores were found not to be living up to the rules of the department and were given a sufficient time to correct their ways or suffer the penalty of being closed.

There are a large number of fine pharmacies and drug supply houses and

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NOTE—Dr. Walter J. Cree is an old member of the Michigan State Medical Society. At the expiration of forty years in general practice he was made an "honor" member of the Wayne County Medical Society. He has made frequent holiday trips to Cuba and his paper will appeal not only to the profession in general, but especially to those who are nearing the half century of active practice.—Editor.

anything obtainable in the United States can be found in Havana. The surgical supply stores carry a full line of all surgical and dental necessities. Certain drug stores are open all night. The telephone guide and newspapers carry a list of the stores open each particular night in the week and this makes it convenient for anyone in need to locate the nearest pharmacy with ease.

The Sanitary Department have recently placed in use for the benefit of school children, an ambulance fully equipped with dental supplies, in fact, a complete dentist's office. Daily visits are made each school. This is for emergency work and is another factor in the educational campaign. The school children are in uniform, the girls in white waists and blue skirts, the boys in brown linen. They present a neat appearance.

A Cuban law requires that cafes, restaurants, saloons, etc., give free, a glass of cold water to those who request it.

The Cubans are great lovers of sweet drinks and while any quantity and all kinds of pre-Volstead drinks are obtainable, it is rarely that one sees a native under the weather. As for the tourists, there is another story.

Havana is well supplied with hospitals. There is a training school for men and women and a special building for tubercular cases. There are a number of smaller hospitals maintained by private individuals or benefit societies and they, too, have a very important part in maintaining the health of the city. San Lazaro Leprosy Hospital is situated near Rincon, a few miles from Havana, and has capacity for 200 cases. I had the opportunity of visiting this hospital through the courtesy of Francisco M. Fernandez, Minister of Public Health and Hospitals, and Dr. J. E. Lopez Silvero of the same department, and was well rewarded by my visit. Everything in and about the institution is spotlessly clean and as it seemed to me, the patients enjoyed their surroundings as much as possible under their affliction. Much is done for the pleasure and comfort of the patients. In a large assembly hall entertainments are frequent, motion pictures shown weekly and a radio does its share. Billiards, pool, cards, chess, etc., offer a source of entertainment. No one could receive better care than do these unfortunate people and great credit is due the Sanitary Department for its good work. I saw many cases in different stages and the more special ones were shown me by Dr. Carlos M. Pernia, director in charge of the hospital, to whom I am very grateful for the courtesy shown.

Besides the hospitals mentioned, there are a number of "Los Hospitales Particulares" (The private hospitals). These are in connection with numerous "Circulos" (clubs) and Havana is a city of clubs. The members are assessed a certain amount monthly and in return have the opportunity of meeting people from the provinces of their ancestors; young people receive night instruction in all branches of education; medical and surgical service is also included. Some of the club buildings are beautiful examples of the architect's vision.

El Sanatorio—"Covadonga", the hospital of the Centro-Asturiano Club, with a capacity for nearly 900 patients and equipment not excelled by any institution.

La Purisima Concepion is the hospital of the Association de Dependientes—(Clerks' Club) with a capacity for nearly 800 patients, and the buildings are beautiful.

La Beneficia of the Centro Gallego Club is another fine institution with a capacity for about 700 patients.

Other hospitals, such as the Santa Teresa de Jesus, Nuestra Senora de Candelaria, Hijas de Galicia, La Balear, do a very important part in keeping up the health of the city. The staffs are made up of men of highest rank and a national and world-wide reputation. I have had the pleasure of meeting quite a number of the fraternity and have found them very cordial and ever willing to aid and assist a visiting physician.

I have been taking my vacation during the winter for a number of years and have found no better place than Havana. I have met members of our State Society there and believe they agree with me.

Havana is a large city and very interesting from a historical point of view. In the older parts of the city, one finds the narrow streets, the old houses and Havana as it was in days gone by. The newer Havana has broad streets, modern homes of the Spanish type. The city is generously supplied with parks and monuments. There are churches of all denominations. The old Columbus Cathedral, built in 1704, is of interest and the mural decorations in some of these old edifices are remarkable. Amusements of all sorts as one desires. Horse racing, Jai-Alai (The Spanish handball), the Casino—the Monte Carlo of the

western hemisphere, where all games of chance are indulged in for better or worse. The old forts and other historical buildings command one's attention. There are three English daily papers and about twenty Spanish dailies, besides numerous weeklies, illustrated and otherwise. Large numbers of cars of foreign make keep company with the high priced American ones. Taxi drivers use the Chevrolet and Ford almost exclusively, drive all over the street with apparent abandon, but accidents are very rare. The drivers are very courteous to the pedestrian, an example which might well be followed in our country. The streets can be crossed in safety. The city is full of restaurants of all sorts and nationalities. Hotels are numerous and any sized pocket book can be suited. The annual "Carnaval" during February and March is very interesting, especially when viewed for the first time. Decorated autos pass along the route of the parade for several hours and the air is full of confetti, serpentinas, etc. Decorated floats and pretty girls in costume beautify the scene. Immense crowds come in from the surrounding country and yet there is perfect order. The Havana police, and they are one of the best in the world, have a method of handling crowds and very little friction is noted.

The people in Cuba are very friendly to their northern brothers and show the tourist every attention. If one is trying to acquire a working knowledge of Spanish he is helped and not ridiculed, as is sometimes done in this country when a foreigner wishes to make himself understood. Altogether I believe that a vacation, even for a few weeks, is productive of a good deal of pleasure and profit, if spent in Cuba.

SOME PHASES OF INDUSTRIAL (FACTORY) EYE SURGERY

DON M. CAMPBELL, M.D.L.R.C.S. (Edin)

DETROIT, MICHIGAN

The importance of medical and surgical work to Modern Industry, is well illustrated by the fact that in the January, 1926, edition of their Annals, the American Academy of Political and Social Science devotes the entire issue of 224 pages, made up of 43 articles by the foremost executives, industrial surgeons, safety engineers, teachers, publicists and government experts, to the consideration of the various phases of industrial safety.

Furthermore, it has been found that in well over 50 per cent of all factory injuries, the eyes are more or less seriously involved, hence one may safely conclude that the phase of industrial accidents in which we are particularly interested, occupies no mean place.

The economic side of the situation is very important to everybody concerned, but there is the other human side which is quite if not even more absorbing.

This workman leaves his home in the early morning hours—starts his day's work, and presently received a wound which always means loss of time and reduction of pay—frequently permanent loss of function, sometimes loss of part of his body, and occasionally, loss of his life.

This man has made a tremendous contribution to industry—also industry sustains a great loss from his inability to work; so, the preservation of the health and efficiency of the workman becomes one of the *most* important outstanding problems in the economic condition of any and all great industrial efforts—accepted and believed in by all.

Some of our efforts to prevent trouble—to combat it when it comes—to correct or compensate for its ravages, will be presented tonight.

The first slide which I shall show, is interesting, as illustrating several important statistical points of great value.

The tabulation was made for and published in an article by Campbell and Carter, which appeared in the American Journal of Ophthalmology.

The slides which follow, refer specifically to the questions of the management of a certain phase of industrial ocular injury—viz—the retained foreign body—its location, diagnosis, and the best methods known for its removal.

Following these, there is a series dealing with more general aspects of industrial injuries, which it is hoped, will carry a message of value to those not peculiarly interested in the purely medical and surgical sides of the subject.

There will then follow a number of contributions by our guest, after which, a general discussion will be held.

Local treatment consisted in curetting of the ulceration—the use of a fortified Lugals solution —according to the technic of Vierhoff—was employed, as was also in many of the cases, the actual cautery.

The eyes were kept scrupulously clean by warm boric solution bathing and atropine employed to keep the pupil dilated.

Foreign proteins, including pasteurized milk and particularly in this series diphtheritic antitoxin were used systematically.

The antitoxin was also used locally and our progress notes show that the latter form of local and constitutional management gave us the best results.

Question—Can medicine enter into a constructive program with industry, looking:—

First—To the reduction of industrial accidents and disabilities to a minimum;

Third—To educating the artisan and the worker to the point where labor will recognize the immense economic and physical benefit coming to it from such a program.

The answer, not far to seek, is in the affirmative, and is found in a consideration of one of the really shining bright spots in the history of modern medicine, and it is that one where the profession threw off its provincialism, joined hands with industry and made a really essential contribution to human industrial economic progress, and so made it physically possible to build the Panama Canal.

In Africa, a great British doctor is doing the same thing for his own countrymen—Balfour, the

Gorgas of Africa, has made it safe for labor on the Nile, and the great dam at Assouan—one and a quarter miles long—emerges.

A far greater opportunity is knocking at our doors today, when the throbbing industrial life of America needs our help. Shall we embrace it?

SUMMARY

1. We wish to emphasize the great importance of proper treatment for minor injuries to the eye.

2. That 92.1 per cent of all the industrial injuries seen in our office were originally minor injuries.

3. That many of these show great loss of vision because of opacity of the cornea following infection.

4. The cornea suffered injury in 78 per cent of our cases.

5. That all corneal injuries should be seen promptly by a competent oculist and closely followed and observed for infection.

6. We would advise the removal of an intraocular foreign body over the posterior route only in those cases with an open wound in the sclera through which the extraction can be made, and in those cases where an attempt at removal over the anterior route has failed.

NEW METHOD OF BLOOD TRANSFUSION REPORTED

A new and safer method of transfusing blood into little children and babies suffering from severe infections or a lack of life fluid was reported to the American Medical Association at Minneapolis by Drs. W. C. C. Cole and J. C. Montgomery of Detroit. The usual method of making a blood donation from a well person to the patient is to inject the blood into a vein, a prodecure that is sometimes difficult and dangerous. The Detroit physicians inject the reviving blood directly into the peritoneal cavity, the portion of the body that contains the stomach, bladder, bowels and other organs. They have used this method for 237 transfusions on 117 patients with promising results. Unwelcome reactions upon the patient are sometimes avoided and the method is so simple that every physician should be able to use it when the usual method of blood transfusion can not be used. Science Service.

APHORISMS

(From "The Doctor Looks at Love and Life," By Dr. Joseph Collins.)

The more any system of theosophic or esoteric doctrine is attacked by sense and logic, the more it flourishes.

What compulsory education does for many is to make them discontented with their lot, to make poor clerks out of good laborers, unsatisfactory ladies and gentlemen out of competent "help."

Most people do not want to think; they find it disagreeable and exhausting. They want to do things that will prevent them from thinking—read, listen to the radio, look at moving pictures.

Novels do not contribute to our fundamental culture. Most of them are a potent antidote to thought and they are among the most efficient ways to waste the only thing that never can be replaced: time.

When we learn to play with a certain measure of success, or when we become habituated to it, our inclination is to standardize it, or to limit it to the elect. Thus golf today is a rich man's game, played oftener to display prowess than to secure relaxation. We play for records and we work for riches.

College education is now to be obtained, mostly, by those who are in funds, while it should be exclusively for the benefit of those who can best profit by it. Is it better to give University training to a rich high-grade imbecile, or to an intelligent boy handicapped by poverty? The common sense answer is not consistent with the general practice.

Open-mindedness does not flow from the sort of education that is given our children and youth. Pedagogy awaits a Martin Luther, Sociology a Votaire. Our bell-cows should be slaughtered, and the bells melted. The young should be taught how to think. Thought is the expression of power in its highest and noblest form. It is the enemy of privilege, the friend of mercy, the proponent of justice.

Submitted to the intelligence, the doctrine of Christian Science is repellant; submitted to the emotions, it is satisfying. One may take the diphtheria organism, which is as real as a rabbit, whose life's cycle is as knowable as man's, put it in the mucous membrane of the upper air-passages of an individual, watch it develop and strangle him; the spark of life having been extinguished, the remains are buried or incinerated; still it is not real! It is not real if life and death are not real.

Just in proportion as our material prosperity has increased, our spiritual prosperity has diminished. Liberty, as the architects and builders of the nation understood it, does not exist any more. Our government gets more paternalistic and centralized every year and the time is in sight when all of man's conduct will be regulated by law. It will tell him where he can go and when; what he can indulge in and what he must avoid; what he may study and what he shall not read; how he must dress and what he cannot put on or leave off.

Real education is not that which is gleaned from text-books, and the preparation of the soil must be that which teaches the individual to desire education. The wish to learn is the sine qua non of adult education. A man may acquire a vast amount of information and be uneducated; he may have spent his time dreaming with the great poets, thrilling with the immortal musicians, communing with Nature, and be more educated than his University brother whose sum of acquired knowledge has not imbued him with curiosity and constructiveness, the basis of all intellectual life. Education has another function, an important one: to develop sympathy and create open-mindedness.

MICHIGAN'S DEPARTMENT OF HEALTH

GUY L. KIEFER, M. D., *Commissioner*

The work done by the Bureau of Laboratories for the two year period ended June 30, 1928 is indicated by the following excerpts from the bureau's biennial report.

"A review of the Houghton Laboratory report for 1926 to 1928 shows a decrease in diphtheria and typhoid work. This lowered the total number of examinations made for the first half of the period, but was compensated for in the next half by an increase in other examinations, particularly venereal disease work, which brought the total to its 1926 level. The average number of examinations made by each of the scientific personnel was 845.

"A noteworthy addition to the laboratory service in the state was the opening on September 1, 1926 of an extension laboratory in Grand Rapids, known as the Western Michigan Division Laboratory. Exactly the same character of work is done as in the central laboratory in Lansing and its personnel is interchangeable with that at Lansing.

"In deciding the location of the extension, railroad facilities were taken into account. Placed as it is, it receives specimens from most of the western part of the state without mail transfers and thus can give quick service. This great step in advance was made possible by the co-operation of the State Administrative Board and the City Commissioners of Grand Rapids. The quarters furnished by the City Commission are absolutely ideal. The old city hospital building was completely remodeled, giving the best possible arrangement for the installation of the scientific equipment furnished by the Michigan Department of Health. That this service has been appreciated is evidenced by the reports of the Western Michigan Division laboratory which show a 43 per cent increase in the examinations made in the second year of its existence.

"Much of the work done is for the city of Grand Rapids. This is especially true of the work in throat infections for the release of patients from quarantine in the contagious hospitals.

"The number of milk samples examined is unusually large. Most of them come from the Grand Rapids area, but many, being examined in co-operation with the Department of Agriculture, are brought from nearby counties by the inspectors of that department. The Grand Rapids laboratory tests milk products, the examination including plate count, Babcock test and specific gravity.

An average of 1,140 examinations per month was made by each of the scientific personnel at Grand Rapids during this two-year period.

"The work in the Lansing laboratory was appreciably lightened by the installation of the Western Michigan Division laboratory, the number of examinations made in Lansing decreasing in all of the communicable disease work. A decided increase in the number of body fluids examined is indicated by the increase in animal inoculations. This figure represents, almost entirely, animals inoculated with specimens to show the presence or absence of tubercle bacilli.

"On April 1, 1927, blood chemistry examinations were discontinued as one of the free diagnostic tests run in the laboratories of the Michigan Department of Health, but were continued on a fee basis, the regular commercial laboratory fee being maintained.

"Water and sewage work remains important, partly due to outside influence. The Bureau of Engineering has continued its survey of the water supplies along the main highways of the state, and instituted, but only partially completed, a survey of the water supplies of the rural schools.

"The problem of stream pollution is gradually developing. In co-operation with the Department of Conservation, this department collects and analyzes samples of water and sewage. After a study of the character of the pollution and experiments to determine the best means of waste disposal, recommendations are made to the industries based upon the findings. Up to the present time, particular study has been given to tanning factory wastes and to those from milk products. Each of these industries raised a sum of money to be used in studying their wastes in an experimental plant under the supervision of this department. Many valuable facts were discovered by the work by which both the industries and the state gained.

"One of the new practical phases of the laboratory research work is the prepara-

tion of bacteriophage in the place of autogenous vaccines as a specific therapeutic for furunculosis, acne and other skin infections. When physicians send cultures from such infections for autogenous vaccines, staphylococcus, if found, is tested for susceptability to lysis of bacteriophage and if found to be susceptible, it is suggested that the physician try bacteriophage instead of the vaccine. The results obtained by private practitioners and in state institutions have been encouraging.

"This phase of the research work has entailed intensive investigation of many problems directly connected with it but which have an application to broader fields, such as filterable forms of bacteria; and antigen with special reference to the effects of bacterial dissociation.

"Examinations in the clinic room of the laboratory have increased. Effort is made to keep such examinations as few as possible. No interference with physicians is possible, however, as only such patients are taken as have written requests from their physicians that certain specimens be collected or certain tests be made. There were 952 persons treated in the clinic room during the first half of the period and 865 persons during the second half. A little over 10 per cent of those treated represented persons in laboratory work receiving toxin-antitoxin vaccines, Dick and Schick tests for the most part. The others are persons sent by their doctors for blood counts, Kahn tests, sensitization tests for hayfever, darkfield examinations, et cetera; state police for physical examinations; state employes for dressing to injuries sustained during duty.

"The extension work of the laboratory has been continued. A class has been given for the nurses of the Lansing hospitals, meeting twice each week in the evening during the winter months. The nurses learn the uses of a public health laboratory and the handling of communicable diseases from a laboratory point of view. Classes are also given for students from Michigan State College. These consist of a four hour period daily, three days a week during a term. Public health methods are given in practical work with one lecture a week. An examination on laboratory procedure must be passed at the end of the term before credit is granted. During the past year six students enrolled in the course, six others having completed the course the preceding year.

"The laboratory is visited each year by many interested in administrative problems of public health work and in certain methods in use here. During the past two years the directors of four state laboratories each spent several days in the laboratory as did several directors of city laboratories. We were also visited by doctors traveling on a Rockefeller Fellowship, two from Bulgaria, two from Ceylon, one from Jugo-Slavia, one from Brazil, two from India, one from Mexico and one from Spain. Each remained for at least six weeks. Other foreign visitors have come for observation and spent shorter periods of time.

"The 1927 Legislature passed several bills which indicate a widening of scope in the work of the laboratory. One provides that all laboratories where live pathogenic germs are handled be licensed. Before any pathogenic organisms are distributed, the license number of the laboratory to which they are given must be known. The act, in addition to its main purpose of supervising places where infectious organisms are handled, will bring the laboratories in the state into closer touch with the laboratories of the Michigan Department of Health. Ninety-two laboratories were registered during the first year of the law.

"Another bill provides for the manufacture and distribuation of antitoxin and other biological products for use in the control of communicable diseases by the Michigan Department of Health. This act allows the activities of the Biologic Products Division to be extended.

"A third bill provided that all taxi drivers have a Kahn test before a license for driving be granted them. This law greatly increased the number of Kahn tests made, but instead of doing them all in a small space of time as had been anticipated, they lagged throughout the entire year.

"An important factor in the decrease of routine laboratory examinations during the past year is the increasing number of municipal and private laboratories established throughout the state. Where such laboratories exist, very little work is sent to the state laboratories except, perhaps, blood for Kahn reaction, cultures for virulence test or specimens on which special work is wished. This development is a welcome one, however, as the chief aim of the laboratories of the Michigan Department of Health is to act as guide in new methods and procedures in laboratory diagnosis, a clearing house for technical problems, and a leader in research work.

"That research work is constantly being carried on by the members of the laboratory personnel is evidenced by the number of scientific articles published during this two year period.

Number of Tests per Physician in Michigan	44.1	50.2
Number of Tests per 1,000 people made in Lansing Laboratory	35.4	35.2
Number of Tests per 1,000 people made in Houghton Laboratory	4.3	4.7
Number of Tests per 1,000 people made in Grand Rapids Laboratory	11.6	16.2

Report of the Biologic Products Division will be printed in the next issue of the Journal.

Dr. Robert P. Stark, connected with the staff of the Bureau of Epidemiology since January, 1928, died at the University Hospital on Tuesday, August 14, of uremia. Dr. Stark was a graduate of the University of Michigan Medical School, and was, for a number of years, in private practice in Allegan.

Dr. C. S. Moore of Cadillac, health officer of the newly organized Wexford County health unit, has returned from taking a course at the Rockefeller Foundation Training School for county health officers at Greenville, Ohio. Dr. Moore will spend some time in Lansing at the Michogan Department of Health, and will go from there to Pontiac and Saginaw, to observe the work of the Oakland and Saginaw County health departments.

Dr. W. J. V. Deacon, director of the Bureau of Records and Statistics, returned to Lansing on July 30 after a four months' leave of absence spent at the Texas Department of Health, assisting in the effort to bring that state up to the standards set for admission to the Registration Area. Dr. Deacon was in charge of a staff of ten persons working under the Federal Census Bureau and the American Public Health Association's committee to aid in the completion of the Registration Area. Texas is the largest of the five states still outside the area, and special interest centered in the campaign in that state. While the objective was not reached during Dr. Deacon's stay in Texas, he feels that definite progress was made, especially along the line of arousing public interest in and support for the measure.

VISITS OF ENGINEERS DURING THE MONTHS OF JULY AND AUGUST, 1928

Inspections of Railroad Water Supplies: total 62.

Bay City
Benton Harbor
Bessemer
Cadillac (2)
Calumet
Caro (2)
Caseville (2)
Channing
Crystal Falls
Escanaba
Frankfort (3)
Gladstone
Gladwin
Grand Haven
Grayling (2)
Houghton (2)
Iron Mountain
Iron River (2)
Ishpeming
Keweenaw Bay
Ludington
Mackinaw Island
Manistee (2)
Marine City
Manistique (2)
Marquette (2)
Menominee (3)
Munising
Pentwater
Petoskey
Port Austin (2)
Port Hope
Port Huron (3)
Richmond
Saginaw
Shingleton (2)
Sault Ste. Marie
Stambaugh
Thomaston
Traverse City (2)
Wakefield
Watervliet
Watersmeet
Wells

Inspections and Conferences, Sewerage and Sewage Disposal: total 73.

Alma
Bay City
Birmingham
Caro (2)
Clio
Comstock
Dearborn
Durand
East Grand Rapids
Eloise
Fenton
Fremont
Grand Ledge
Grandville
Grayling (2)
Gregory
Hart (3)
Hillsdale
Holland
Ithaca (2)
Jackson (3)
Lansing
Lincoln Park
Long Lake (3)
Ludington
Muskegon
Muskegon Hts. (10)
Mt. Clemens
Paw Paw
Pentwater
Pinconning
Pine Lake
Plainwell
Pontiac (2)
Rochester (2)
Royal Oak
Saginaw (3)
Sandusky
South Haven
Sparta (3)
St. Charles
Standish
Sturgis
Tashmoo Park
Vicksburg
Walled Lake
Wequetonsing
Yale
Zeeland

Inspections and Conferences, Water Supplies: total 134.

Adrian
Algonac
Alma (3)
Anchor Bay Beach
Baraga (2)
Bay City (2)
Bellaire
Boyne Falls
Boyne City
Brighton
Calumet
Central Lake
Clare
Clio
Crystal Falls (3)
Denton
East Jordan
Edmore
Evart
Fairhaven
Freeport
Grand Haven (2)
Grand Ledge
Grayling (4)
Gregory
Hancock (2)
Harbor Springs
Highland Park (2)
Houghton (4)
Iron Mountain (2)
Ishpeming
Kalamazoo (2)
Kalkaska
Kingsford (2)
Lake City
Lake Gobebic (3)
Ludington (2)
Mackinaw City
Mancelona
Manistee (2)
Manistique (2)
Marine City (2)
Marioin
Marlete (3)
Marquette (4)
McBain
Monroe
Mt. Clemens (2)
Mt. Pleasant (2)
Munising (3)

Negaunee (5)
Newaygo (2)
New Baltimore (2)
New Buffalo (3)
Newberry
New Hudson
North Shores
Northville (3)
Onsted
Ontonagon (2)
Pequaming
Plainwell (2)
Plymouth
Rochester
Romulus
Sault Ste. Marie (5)
Sheridan
Sibley Quarry
Stanton
St. Clair (2)
St. Ignace (2)
Sturgis (2)
Three Oaks (2)
Trenton (2)
Utica (3)
White Pigeon (2)
Wyandotte

Inspections and Conferences, Stream Pollution: total 21.

Bay City
Birmingham
Fordson (Baby Creek)
Hart (2)
Lansing (2)
Marquette (2)
Munising (3)
Muskegon Heights
Newberry (3)
Rapid River (2)
Scottville (2)
Standish

Inspections and Conferences, Institutions: total 10.

Eaton Rapids, V.F.W., National Home, Sewage Disposal.
Grayling, Camp Grayling, Sewers and Water (3)
Hillsdale, County Farm, Sewage Disposal
Ionia, Hosp. of Criminally Insane, Sewage Disposal
Jackson, State Prison, Sewage Disposal
Muskegon County T. B. Sanatorium, Sewage Disposal
Wayne County Training School, Water (2)

Inspection and Conferences, Camps: total 15.

Adrian, Camp Wolverine, Boy Scouts, Inspection
Ann Arbor, Camp Newkirk, Boy Scouts, Inspection
Augusta, Camp Ben Johnson, Sanitation (3)
Buchanan. Camp Sanitation (3)
Fenton, Flint Boy Scout Camp, Sanitation
Jackson, Tee-Tonk-Ah, Boy Scouts, Inspection
Mt. Clemens, Camp Rotary, Water and Sewage Disposal
South Haven, Camp Fire Girls, Water Supply
Sturgis, Camp Wolverine, Sanitation (2)
Waterford, Detroit Boy Scout Camp Brady, Sanitation

Inspections and Conferences, Miscellaneous: total 30.

Bay City, Beach Sanitation
Bay City, Drainage
Buchanan, Private Nuisance (3)
Centerline, Nuisance
Coldwater, Inspection of well (2)
Fenton (Long Lake), Typhoid
Freeport, Drainage
Glenn, Pollution along Lake Michigan
Gowen, Pollution of Lincoln Lake
Lansing, Sanitary Toilets for Schools (2)
Lansing, Oil Nuisance
Mackinaw City, Septic tank at State Park (2)
Mason, Nuisance
Merrill, Ditch Nuisance (2)
Pine Lake, Resort Sanitation (4)
Pontiac, Nuisance (2)
Romulus, Sanitation at Cemetery
Sawyer, Sanitation
Sylvan Lake, Drainage (2)

Inspections of Swimming Pools: total 3.

Flint (2)
Grand Rapids

Roadside Water Survey:

Trunk Line covered, collecting samples, 1,590 miles
Samples collected, 275
Trunk lines covered posting samples, 4,084 miles
School wells tested, 69
Gas stations and garage wells, 88
Tourist camp wells, 8

PREVALENCE OF DISEASE

August Report

Cases Reported

	July 1928	August 1928	August 1927	Av. 5 Years
Pneumonia	186	158	122	118
Tuberculosis	270	697	447	442
Typhoid Fever	2[illegible]	70	88	96
Diphtheria	210	239	212	283
Whooping Cough	789	1,404	674	643
Scarlet Fever	392	264	298	327
Measles	1,197	185	103	193
Smallpox	89	50	59	51
Meningitis	16	17	3	5
Poliomyelitis	1	3	31	28
Syphilis	1,085	982	1,424	1,100
Gonorrhea	740	635	940	840
Chancroid	10	9	13	13

CONDENSED MONTHLY REPORT

Lansing Laboratory, Michigan Department of Health

August, 1928

	+	—	+—	Total
Throat Swabs for Diphtheria				816
Diagnosis	15	210		
Release	119	116		
Carrier	7	333		
Virulence Tests	15	1		
Throat Swabs for Hemolytic Streptococci				556
Diagnosis	84	132		
Carrier	70	270		
Throat Swabs for Vincent's	16	209		225
Syphilis				8087
Kahn	1218	6812	54	
Wassermann		3		
Darkfield				
Examination for Gonococci	118	1357		1475
B. Tuberculosis				456
Sputum	62	347		
Animal		47		
Typhoid				191
Feces	7	60		
Blood Cultures	2	49		
Widals	8	56		
Urine		9		
B. Abortus	5	43		48
Dysentery				60
Intestinal Parasites				13
Transudates and Exudates				240
Blood Examinations (not classified)				110
Urine Examinations (not classified)				300
Water and Sewage Examinations				461
Milk Examinations				50
Toxicological Examinations				
Autgenous Vaccines				1
Supplementary Examinations				143
Unclassified Examinations				518
Total for the month				13750
Cumulative Total (fiscal year)				17261
Increase over this month last year				669
Outfits mailed out				18105
Examinations made by Houghton Laboratory				1444
Examinations made by Grand Rapids Laboratory				5865

THE JOURNAL

OF THE

Michigan State Medical Society

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Contributors are responsible for all statements, conclusions and methods in presenting their subjects. Their views may or may not be in agreement with those of the editor. The aim, however, is to allow authors as great latitude as the general policy of The Journal and the demands on its space may permit. The right to reduce in length or to reject any article is reserved. Articles are accepted for publication on condition that they are contributed solely to this Journal.

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OCTOBER, 1928

"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."

—Francis Bacon.

EDITORIAL

MEDICAL EDUCATION

This is a subject of perennial importance no matter how many the intervening years since our own graduation. The medical colleges are for the most part the sources of new discoveries, if any, in medicine. It is in these institutions that time and facilities are afforded for research. True, many of the discoveries of the past have been the work of persons laboring alone, yet even the lone investigator is apt to have affiliations with some institution of learning. Then, again, we are interested on account of the roster of graduates each year whose presence has its influence on the field of medical practice.

The Journal of the American Medical Association performs a valuable statistical service each year in the publication of a special educational number, this year on August 18th. In spite of the crowded condition of the profession there is a tendency each year for an increase in the number of persons seeking to enter it. The total number of medical students this year is 20,545, an increase of 883 over 1927. The total number of medical graduates June, 1928, was 4,262, or 227 more than last year. There is a disposition on the part of those looking forward to a medical career to pursue a more intensive pre-medical training. The last graduation showed 63.6 per cent of all graduates to be the holders of college degrees. Not only is there a tendency toward a more thorough pre-medical training, but the courses in the medical schools have become more extensive and intensive. A whole month has been added to the medical year as compared with twenty years ago, and in many instances an extra year to the course within less than a quarter of a century. There is a further tendency for the attendance of the Class A college to increase and that of the Class B and C colleges to decrease. The reason, of course, is obvious.

Then comes an interesting phase, namely, the present cost of medical education. The annual fees range from $150 to $600 a year, the average being $300. The tendency since 1910 has been a gradual advance in the cost of tuition. The old time student who, by frugality and industry, put himself through for medicine has become extinct. His successor, however, will doubtless give a good account of himself. While he has been, to a large extent, relieved of the burden of financing himself, his has not been by any means a bed of roses. Never in the history of medicine have the demands made upon the student been so great as they are today. During the past nineteen years over 14,000 registered students dropped out and therefore did not go on to graduation. Doubtless, the great majority of these found the work too arduous.

As mentioned, over 4,200 students received their diplomas and eventually the right to practice medicine in the United States this year. It is stated on good authority that Canada absorbs only about 40 per cent of her own medical graduates. A goodly number of the 60 per cent find their way to the United States. This year the number of Canadian graduates was 444. The distribution of the 1928 graduates would be an interesting study, though impossible on account of the lack of data at the present time. Of recent years there has been a regrettable tendency to specialize without any experience in the general practice of medicine.

COMPENSATORY TISSUE AND DANGER

It has been long recognized that the animal is endowed with much more vital organ tissue than is absolutely necessary to carry on the functioning of life. For instance, one kidney may be removed and if the other is normal, the person may continue indefinitely in a condition of apparent good health. In fact, it has been found experimentally that life function can be carried on with from one-third to one-fourth the kidney substance by which the animal is endowed.

It is quite readily seen that we are endowed with practically twice as much lung tissue as is absolutely necessary to accomplish the aeration of the blood. This fact is apparent to the roentgenologist who sometimes views lungs in which the fibrous-connective tissue and other pathologic changes, such as neoplasms, indicate that only a fraction of the lung tissue is functioning. A sero-fibrinous pleurisy may take up the space normally occupied by one lung, compressing it against the mediastinum; or an entire lung may be put out of commission by means of artificial pneumo-thorax for therapeutic purposes. Pulmonary neoplasms may exist a long time without producing discomfort owing to the compressibility of lung tissue. Even a sero-fibrinous pleurisy, if the fluid is slow in forming, may scarcely incapacitate the patient.

The supra-renal glands are known to play a very important part in physiology. Their complete extirpation means death. However, it has been found at autopsy that these organs may be largely destroyed by tuberculosis and life continue until the final dissolution is by some other or remote pathological condition.

The liver is apparently able to function after a great many of its cells have been destroyed. It has been demonstrated by animal experimentation that three-quarters of the liver may be removed and still preserve its normal function. Pathologists have noted intra-cellular deposits of fat that would tend to decrease the functioning power of the liver and yet death was due to other causes. Man particularly is endowed with a super-abundance of liver cells with which to begin life. These later in life may be replaced to a certain extent apparently with no detriment to the subject.

The pancreas is also provided with a super-abundance of mature cells. It is said that one-tenth of the volume of a normal pancreas is sufficient to maintain life.*

Everyone knows how much abuse the heart will stand from infection and yet the patient sometimes survives in comfort to an advanced age. The living body has a wonderful faculty for self repair. This, however, is called into being only when restitution of cells is necessary.† In physiological circumstances those tissues which are lowest in the functional scale reproduce the most readily, and as the scale is ascended and function becomes more complex, the ability to regenerate becomes less conspicuous. When a tissue reaches functional perfection, as exhibited by the highly specialized ganglion cells, physiological reproduction does not occur.

The law of compensation is everywhere at work. If one organ be impaired its mate, where it has one, becomes capable of functioning practically for both.

Such being true, it is readily seen how the individual may go on for a long time in a condition of comparative comfort, depending unwittingly on the bodily reserve. Eventually the time arrives when the "factors of safety" become exhausted and without warning the body becomes burdened with disease, the advance of which has been so gradual as to excite no suspicion of its existence. The periodic health examination is a "stock taking" process, whereby the person (we will not use the term patient) may become conscious of his bodily reserves before they are exhausted and begin early conservation.

* Human Factors of Safety. Symmes. New York State Medical Journal.
† Loc. cit.

TOO MANY MEDICAL MEETINGS

The rule has been laid down by certain organizations assuming to control hospital organization matters that the staff of all hospitals organized in accordance with the rules laid down by these organizations shall hold regular monthly meetings. In some communities, especially in the rural districts with small cities having one or two small hospitals, the enforcement of this rule has resulted in the staff meeting taking the place of the regular meetings of the County Medical Society. This is an unfortunate situation, because the purposes of these meetings differ widely in many respects. The chief purpose of the hospital staff meeting should be to discuss matters affecting the hospital organization and the character and results of the treatment of patients carried out in the institution, with a view to securing the best possible efficiency for community service. The County Medical Society, on the other hand, should take up scientific discussions of subjects covering the entire field of medicine, particularly those subjects which will redound to the enlightenment of the physicians doing general practice and who have no direct institutional contact. The County

Medical Society is the unit in our plan of organized medicine and is the only doorway to membership in the state and national organizations. The integrity of the County Society should be maintained regardless of hospital staff or any other meetings, because it is the *one* institution in which *all* reputable medical men have an equal standing and the one which represents the interests of the entire organized medical profession.—Wisconsin Medical Journal.

Not only in the smaller cities, but in the larger as well, from September to the end of May, medical meetings are so frequent they conflict with one another. We endorse the viewpoint of our neighbor journal in its emphasis on the county medical society. This is the only organization which includes the whole profession. It is, as the Wisconsin Medical Journal intimates, the primal unit of organized medicine and therefore the port of entrance to the state and the national society. It is not an uncommon thing to see an attendance of less than 10 per cent of its membership at the county society meetings. Probably at no time in the local history of medicine has it been so important that the physicians identify themselves with and attend regularly their county society.

PRACTICE BEFORE THEORY

As a rule what is known as pure science has preceded the practical application of the results of scientific research. Faraday's work on pure electrical science preceded any practical use to which electricity has since been put. The vacuum tube in the hands of Geissler, and later Crookes, was of no apparent pragmatic value; it remained for Roentgen to make it one of the greatest factors serving human necessity. Hertz, whose name is associated with the Hertzian waves now so familiar to radio enthusiasts, died in 1888, long before wireless was ever discovered. Other examples might be mentioned.

However, this is not always the case. Sometimes the technician, with no knowledge of scientific principles, invents contrivances which were considered impossibilities on scientific grounds. "He didn't know it couldn't be done so he did it." Even so great a physicist as Lord Kelvin considered the "heavier than air" flying machine to be in this class. The presence of the successful aeroplane brought forth many problems for the physicist to expound.

Nor is the condition confined to the realm of physics and chemistry. Until half a century ago our therapeutics was largely impirical. Until within comparatively recent times, who could give a rational or scientific explanation of the employment of mercury in the treatment of syphilis, or quinine in malaria, or citrous fruits in the prevention of scurvy? Man lived a long time before the scientific method came into vogue. A great deal of our knowledge is the result of the so-called "trial and error" method.

HOW THE LAITY LOOK AT IT

It is a truism that if one repeats a statement often enough he will begin to believe it whether there is any truth in it or not. It has been said again and again that the very rich and the very poor receive the best medical service and that the great middle class, the in-betweens, are apt to be neglected or are unable to pay for what the rich receive for a price and what the poor receive for nothing. From nearly a quarter of a century's association with the medical profession, we have never accepted this statement as fact. However, it has inspired the following paragraphs from The Cincinnati Post:

"The fact is that doctors' bills and the high cost of rooms in hospitals are forcing more and more self-respecting people to seek free medical service. They are not poor, but they cannot afford to pay the high price of getting well.

"Every man is entitled to medical service as good as that which his richer neighbor gets. When good medical service goes beyond the reach of many *it becomes the duty of the state to provide it free or at a nominal cost* for the self-respecting.

"A popular medical institution today is the Pay-Health Clinic, which charges $5 for a complete physical examination, including X-ray. This is patronized not by the very poor, but by the so-called middle class that cannot afford doctors' fees ranging from $25 to $50 for an examination.

"If doctors' bills continue to be high the establishment of more such clinics, not only for examination, but also for treatment, will become absolutely necessary for the public welfare."

It is this sort of reading matter in the lay press that promotes popular discontent where there is little real ground for it.

EDITORIAL NOTES

The Wayne County Medical Society Bulletin is an interesting publication which is eagerly looked forward to each week by the majority of the members of the society. For the past few years the editorship has alternated between Dr. W. S. Reveno and Dr. Charles E. Dutchess. Both are men of editorial ability and it is

difficult to judge which has made the greater success of the Bulletin. It comprises at present thirty-two pages of reading matter and advertisements. For a number of years it has been self-supporting. After a year's rest Dr. Dutchess is in the sanctum.

Every once in awhile members of the medical profession are solicited for written opinions on some product or other. A few months ago it was cigarettes; later it was for an opinion on the therapeutic properties of yeast. The testimonial is not sought gratuitously, the remuneration being a box containing a dozen packages of cigarettes or a bottle of perfume. Of course thoughtful physicians will think twice before they sell their professional birthright for the proverbial mess of potage. The object is commercial exploitation under the aegis of the doctor's professional approval.

With the multiplication of automobiles on the city streets and rural highways, the problem of personal safety is assuming grave proportions. The driving of an automobile requires a clear head. Often serious accidents result from driving while tired or at night when the driver is in a somnolent condition. More often accidents are caused by drivers in a state of intoxication. Sometimes when such cases come to court the result hinges on the definition of what constitutes drunkeness. It was once told of a witness that he denied that the defendant was drunk because he saw him "move his little finger." However, the best view of the situation appears to be that of a magistrate who declared that the question is not that of discovering a definition of drunkeness, but of deciding whether the skill and judgment normally required in the management of a motor car may have been diminished or impaired as a direct result of the consumption of alcohol.

The Journal is indebted to Mr. J. W. Drummond of Detroit for the following note referring to the poem which appeared in the August number under the heading, "Lines on a Skeleton." A reward of two hundred and fifty dollars, offered more than three-quarters of a century ago, for the discovery of the identity of the author of "Lines on a Skeleton" was as unsuccessful in attaining its object as had been the search made by the literary world of Great Britain, and it now seems scarcely likely that the person who wrote this remarkable poem will ever be known as its author. The story of the finding of the manuscript is to the effect that in the year 1820 an attendantant in the Museum of the Royal College of Physcians and Surgeons in London, came upon a couple of sheets of paper lying near a human skeleton. Glancing at the sheets, he saw they contained verses. The ink with which they had been written was scarcely dry, and the idea occurred to the finder that they might have been penned by some official of the institution. Accordingly he took the sheets to one of his superiors, and in the course of the next few days the manuscript passed through the hands of several well known medical men who were wont to visit the college. One of these gentlemen copied the verses and sent them to the MORNING CHRONICLE, which promptly printed them. The poem made a marked impression on the public mind, and earnest efforts were made by several prominent literary people to discover the identity of the author.

THE JOY OF BEING THE EDITOR

Getting out this magazine is no picnic.
If we print jokes, people say we are silly.
If we don't, they say we are too serious.
If we clip things from other magazines,
We are too lazy to write them ourselves.
If we don't we are stuck on our own stuff.
If we stick close to the job all day,
We ought to be out hunting up news.
If we do get out and try to hustle,
We ought to be on the job in the office.
If we don't print contributions,
We don't appreciate true genius.
And if we do print them,
The magazine is filled with junk.
If we make a change in the other fellow's write-up,
We are too critical.
If we don't, we are asleep.
Now, like as not, some guy will say
We swiped this from some other magazine.
WE DID*

*So did we. Our swipe was from *The Fulton County Medical Bulletin.*

* We did too. We clipped it, from California and Western Medicine.

MEDICAL ETIQUETTE

"I say, without the slightest fear that I may be overstating my case, that there is no profession which is more exposed to the temptation to forget honor, humanity, and kindliness than the medical profession, and none in which the exploitation of human suffering is easier. Yet there is none in which the temptation is so triumphantly withstood. Let this be remembered by the public when they feel inclined to sneer at medical etiquette and to speak of it as if it were a code for maintaining selfishness and enrichment. Medical etiquette is the salvation of the patient. It is the one thing which stands between him and the dangers of

exploitation. It is what makes him his sufferings hold the dominant part in the dread dramas of pathology."—John St. Loe Strachey, *The River of Life.*

THE (BORIC) ACID TEST

Auntie's down with para-typhoid, Uncle suffers from ptomaines,
And the doctor looks suspicious and inquires about the drains;
Two policemen died last Friday and the driver of a tram—
There's a rumour it was measles, but the sergeant says it's ham.

O refrain from vain conjectures
And from rumours born in stealth,
And remember all the lectures
From the Department of Health!
Keep your minds at ease and placid,
For the inquest showed at least
Not a trace of boric acid
In the corpse of the deceased.

If this morning's milk has curdled, and the cream has turned to cheese,
It's proof that no preservation has entered into these;
If the fish is phosphorescent and the beef is turning blue
You can tell they've not been doctored with some now forbidden brew.

So if botulism briefly
Brings about your swift release
Let your final thoughts be chiefly
Those of gratitude and peace.
Let not vain regrets detain you—
If you'd struggle on alive
Boric acid might have slain you
At the age of ninety-five.

—The Manchester Guardian.

THE PHYSICIAN'S ENGLISH

(The Atlantic Medical Journal)

All physicians write papers, but not more than one per cent have taken the trouble to learn how to do it properly—in fact, this figure is probably too high. The *New York Times* recently published a few words on the subject of professional English which are quite apropos of this remark. For example: A Yale professor who had been examining theses for the degree of doctor of philosophy confessed that "few of them were really comprehensible and all of them were totally devoid of the interest competent presentation can give to almost any subject." And again: "The truth is that in schools and colleges, and more particularly in those divisions where there is specialization in fields outside of literature, too little is done to faciliate the teaching of English." To this we would add a fervent "amen!" The physician who wants to write a paper should first assure himself that he has something worth writing about. He should then analyze the subject and classify his thoughts. He should expect to rewrite the paper from two to four times unless he has unusual experience in writing. He should condense it to the limit of clearness. He should scan it carefully for incomplete sentences, ambiguous phrases, incorrect spelling, grammar, and punctuation. He should be sure that his paragraphing is good. (We have seen papers without a single paragraph indention throughout, and we have seen papers in which every sentence is paragraphed.) Finally, he should correct the finished product in ink, and let no typographical error escape. If he has additions to make, the page should be retyped. He should not expect either the editor or the printer to guess at his chirography. The sure test of a well written paper is this: Could an intelligent layman, provided with a good dictionary, comprehend its meaning? If not, it needs to be rewritten.

THE AMERICAN COLLEGE OF SURGEONS

(Boston Meeting)

The American College of Surgeons will hold the eighteenth Clinical Congress in Boston, October 8-12. Headquarters will be at the Statler hotel and meetings will be held in the ballroom of the Copley-Plaza hotel and Symphony hall. The Hospital Standardization Conference will be held in morning and afternoon sessions in the ballroom of the Copley-Plaza hotel Monday, Tuesday, Wednesday and Thursday. An innovation this year will be the commencement of the clinics in the Boston hospitals on Monday afternoon, continuing through the mornings and afternoons of the following four days. Monday evening's program will include an address of welcome by the local chairman, the address of the retiring president, Dr. George David Stewart, New York, the inaugural address of the president, Dr. Franklin H. Martin, Chicago, and the John B. Murphy oration on surgery by Professor Vittorio Putti of Bologna, Italy. Tuesday, Wednesday and Thursday evenings' sessions will be held in the ballroom of the Copley-Plaza hotel. At the Wednesday evening meeting the visiting surgeons will be the guests of the Boston Surgical Society at a special meeting when the Bigelow medal is to be awarded. On Friday evening the annual convocation of the college will be held in Symphony hall when the 1928 class of candidates for Fellowship in the college will be received. The fellowship address on this evening will be delivered by Dr. William J. Mayo. The annual meeting of the Governors and Fellows will be held Friday afternoon and will be followed by a symposium on traumatic surgery to be participated in by leaders in industry, labor, indemnity organizations and the medical profession. Ether day will be celebrated in the Dome Room of the Massachusetts General hospital on Friday when a bronze bust of William T. A. Morton will be presented to the hospital. It was in this building that ether was first administered for the production of surgical anaesthesia on October 16, 1846. Several newly completed medical motion pictures produced under the supervision of the American College of Surgeons and approved by it will be shown during the congress. Reduced fares on the railways of the United States and Canada have been authorized to those holding a convention certificate so that the total fare for the round trip will be one and one-half the ordinary first class one-way fare. Other outstanding features will be the exhibits. In addition to the commercial exhibits the departments of the college will present scientific exhibits. A number of distinguished foreign guests of international reputation have signified their intention of attending. The chairman of the Boston Committee on Arrangements is Dr. Frederic J. Cotton.

NEWS AND ANNOUNCEMENTS

Thereby Forming Historical Records

Our sympathy is tendered to Dr. A. M. Barrett of Ann Arbor in the death of Mrs. Barrett on September 14th.

Dr. George Van Amber Brown of Detroit has been elected president of the American Association of Gynecologysts and Abdominal Surgeons, at the annual meeting of that organization held recently in Toronto.

The Ottawa County members held their annual golf match at the Holland Golf club on September 12th. Dr. W. Westrate was the director. Dr. Tappan of Holland carried off the honors winning the low total of 91. A dinner at the club followed the event.

The Kent County annual golf match was held at the Kent Country Club, Grand Rapids on September 12th, and was followed by a dinner. The enthusiasm exhibited initiated a movement to hold monthly matches during the 1929 season.

Meeting of the Ann Arbor Surgeons was called to order by Chief Surgeon, A. M. Hume, August 25, 1928 at 10 A. M. on board Wabash Car Ferry going to Menominee. Some eighteen surgeons were present.

Dr. A. M. Hume reviewed the history of the organization and spoke of the value which the R. R. company placed upon the co-operation of its company surgeons, and they were willing to co-operate in making these meetings a success, as far as possible.

Dr. Hume then took up care and treatment of injured, laying stress upon the fact that the injured were to be first in the minds of company surgeons, always using the best at their disposal for a speedy recovery.

Copies of instructions to surgeons were distributed to each member after which same was discussed and many good questions were asked. Instructions were also given regarding passengers. Letter from Mr. Sibo was read and carried a full discussion. Meeting adjourned until after lunch.

At Menominee we were allowed to have one and one-half hours to go ashore. Dr. Walker, company surgeon of Menominee, had busses waiting and the wives and other members of the surgeon's family, as well as the surgeons, were shown about the two cities of Menominee and Merrivell. A very pleasant trip, and many things of interest were to be seen.

Afternoon meeting was called to order at 4 P. M. Dr. Hume explained new emergency kit, which is now on passenger and freight trains and at division points. Dr. Snider of Toledo gave a very interesting talk on foreign bodies in the eye. Many questions asked and this was truly a wonderful resume of what each surgeon should know regarding care of so vital an organ.

Dr. DuBois of Alma gave a very fine paper on Blood Pressure in R. R. employees. Discussion and questions were many. Dr. McKenzie of Frankfort reviewed industrial skin disease, empatigo and Vincent's Angina being ones most common.

After dinner all were given a treat by a motion picture put on by Dr. Harold Hume, subject being infections of the hand, a very interesting and instructive picture. The evening closed with cards and dancing, and was one of the best meetings we have had for some years.

OTTO L. RICKER, M.D., Secretary,
Cadillac, Michigan.

A. M. Hume, M.D., Pres.,
Owosso, Michigan.

ENTERS PRIVATE PRACTICE

Dr. John R. Ernst, psychiatrist staff of Henry Ford hospital during the last three years, announces the opening of offices in suite 462 Fisher building, Grand boulevard at Second, Detroit. Dr. Ernst served as captain in the Neuropsychiatric Division of the Medical Corps during the World War and as psychiatrist, Central Board of Appeals, United States Veteran's bureau, Washington, D. C., prior to coming to Detroit.

THE HIGHLAND PARK PHYSICIANS CLUB

The Highland Park Physician's Club will be addressed by Dr. Robert I. Harris of Toronto, on Thursday, October 4, 1928, at 8:30 p. m. at the Highland Park General Hospital. The members of the Michigan State Medical Society are invited to attend. Subject: "Tuberculosis Bacilluria—Its Incidence and Significance in Surgical Tuberculosis." The third annual clinic of the Highland Park Physicians' club will be held Thursday, Nov. 1, 1928, at the Highland Park general hospital from 9 a. m. to 10:30 p. m. The tentative program is as follows: Dr. Henry J. Gerstenberge, Professor Pediatrics, Western Reserve University. Subject: "The Use of the Cinema in Diagnosing the Cause of Convulsions in Children." Robert Livingston Dixon, M. D., Wahjamega, Mich. Subject: "Pre-Convulsive Stage of Epilepsy." Carl Dudley Camp, M. D., Ann Arbor, Mich., Professor of Neurology, University of Michigan. Subject: "Psychoneurosis."

Clarence Leslie Starr, M. D., Professor of Surgery, Toronto University. Subject: "Orthopedics."

James Aitken Harrar, M. D., F. A. C. S. Subject: "Contracted Pelvis."

Theodore Rogers Waugh, M. D., Royal Victoria hospital. Assistant Professor Pathology, University of Montreal. Subject: "Pathology of Pernicious Anemia."

John R. Fraser, M. D., F. A. C. S., Montreal. Subject: "Pelvic Inflammations."

A detailed program will be sent each member of the Michigan State Medical Society as soon as they are printed. Luncheon will be served by the Highland Park General Hospital. Dinner from 6 to 8 p. m.

For further information concerning this clinic, or for reservations at the dinner, write Dr. Chas. J. Barone, Secretary, Highland Park Physicians' club, 26 Waverly, Detroit, Mich.

MEDICO-SOCIAL AND ECONOMIC

WHY WRITE?

Physicians are said to belong to the great silent, the inarticulate profession, and yet perhaps there is no other calling that has a more voluminous literature. Much of the written work of physicians is of a general nature and will live as literature. Among this may be mentioned the Religio Medici by Thomas Browne, the writings of Osler, of Keats, of Oliver Goldsmith, of Locke the Philosopher, of Conan Doyle, of Oliver Wendell Holmes, of Weir Mitchell and many others.

Bacon has said writing maketh an exact man. No other practice trains one in clear thinking to the same degree as writing. Good writing is as much an art as good painting or good sculpture. Addisonian prose or Gray's Elegy are as much works of Art as a Beethoven Symphony or Da Vinci masterpiece. Clear diction comes from a careful study of words, with close attention to the finer shades of meaning. It is peculiar that scientific men who are accustomed to working to the thousandth of an inch or reckoning in milligrams, are so careless as to the accurate meaning of words. Says Sir Clifford Allbutt, "The sifting of language is the weighing of thought. In scientific prose, words should be used as carefully as symbols in mathematics there are no true synonyms in literature, words have not only their stem meanings but carry upon them also many changes and tinctures of past uses which blend inevitably in our sentences." A recent edition of a good standard English Dictionary is indispensable and should be a constant desk companion.

"True ease in writing comes from art not chance,
As those move easiest who have learned to dance."

EASY WRITING, HARD PRACTICE

Mediocre medical writing is due in large part to insufficient pains. The best literature is revised and rewritten many times. The poet Gray took eight years to write "The Elegy in a Country Churchyard." Easy writing and interesting style always imply hard practice. The impression of unstudied ease is the product of the greatest effort. Language and thought are so inseparable that someone has called language the flesh garment of thought.

An important preliminary to writing is what I call thought gathering, which means having within reach a notebook and pencil. These tools of the craft one should always carry with him because the mind has a peculiar way of working when apparently off duty. Unless we capture the thought when it surges into consciousness it is apt to vanish and as an unsubstantial pageant fade, leave not a trace behind. Graham Wallas in his delightful book, "The Art of Thought," uses the expression "Fringe Thoughts" to designate the ideas more or less germane to the subject which come up from the subconscious when a paper, medical or other, is undergoing parturition. Once the title is chosen every thought or idea bearing on it should be noted in such a way that when the rough draft of the paper is made the ideas may be collected and assembled in logical order. Having written the paper out in full, preferably with pencil, put it away for at least a day or so, then read it over to see if one has expressed himself as intended. I may say here that it is not advisable to dictate the first draft or any part of a paper. The process of dictation is apt to detract from one's effort in construction. If certain sentences are not clear, rewrite them on the reverse side of the paper, amplifying as much as necessary for the lucid expression of the idea in mind. Sometimes this may require the revision of whole paragraphs; sometimes the elimination of paragraphs or sentences which may seem trivial and therefore unnecessary. A weak sentence always detracts.

REVISE AND REWRITE

At this stage of revision the paper may be handed over to the stenographer. A convenient size paper is a sheet 8½ by 11, the ordinary business letter head. The matter should be typed double space with a margin of about 1½ inches, on the left side of the sheet. This is very important. Copy typed single space leaves no room for editing, besides it an abomination to the printer. A good revision should be made at some convenient time better if an interval of several days be allowed to intervene. Time to the writer is like distance to the artist who steps back to get a clearer view of the canvas on which he is working. Revision each time should include both the material as well as the mode of expression. After a week or so one returns again to the subject and manuscript with new critical as well as constructive interest. As an aid to revision one of the best is to read the paper or address aloud. The ear will often detect a verbal repetition or an awkward phrase which the eye might overlook.

The rules for punctuation are well known; yet the writer has a certain latitude in the use of punctuation marks. The less involved his style, the fewer punctuation marks are needed.

Short sentences are easily comprehended, yet too many simple sentences are apt to tire the reader. A diction in which short and long sentences are used in about equal proportion is perhaps the most pleasing so far as this feature of composition is concerned.

In scientific papers it is well to avoid the too frequent use of the first personal pronoun. Such composition should be in the third person.

HONEST CRITICISM

It is well if possible to have one's papers edited by a competent editor who will be honest in his criticisms. Faithful are the wounds of a friend. A real friend will point out one's literary shortcomings. I have seen books and papers which were spoiled because of mannerisms of the writer which should have been eliminated in the revision of the copy.

The title of our medical paper has been given due consideration; the body of the paper has been written and revised to our satisfaction; how should we conclude? A long scientific paper should be concluded with a well devised summary which calls for special care. A poor ending leaves

a bad impression. One's leave taking should be as gracious and impressive as the opening portion of the address.

STUDY GOOD MODELS

So much for form. It is important to study good models. The best English from every point of view is the King James translation of the Bible. Many masters of English prose style, from Bunyan to our own time, have derived their inspiration from that well of English undefiled. Many masters of prose might be mentioned, but we need not go outside our own profession for examples. Probably there is none greater than Osler, Sir Frederick Treves, Sir Clifford Allbutt or T. H. Huxley. There is a number of excellent American medical writers who might be mentioned who are of the present generation. Perhaps the feature that impresses itself on us most is the fact that their papers and books are always interesting and looked forward to with eagerness. Someone has said that the test of a good medical paper is the degree with which it appeals to an intelligent layman armed only by a medical dictionary.

WHY WRITE AT ALL?

But we often hear the question, Why write at all? That there is nothing to say that has not already been said; that most medical papers are a rehash of what has been written. Writing is a form of self-expression, as much as art or music or gardening or golf. Writing is constructive as reading is receptive. Writing is constructive; if it be one's very best, it is like the quality of mercy, it blesses him that writes as well as him that reads. As for originality, none of us can be strictly original. Emerson has well said: "There is no such thing as monopoly in ideas. Thought is the property of him who can entertain it; and of him who can adequately place it; a certain awkwardness marks the use of borrowed thoughts; but as soon as we have learned what to do with them they become our own. Thus all originality is relative."

—J. H. Dempster.

DEATHS

FREDERICK J. LARNED, M.D.

Suddenly siezed with a cardiac angina while playing golf, Dr. F. J. Larned of Grand Rapids died on September 6, 1928, at the age of 52. For a number of years Dr. Larned had limited his work to pediatrics and was chief of that service on the Butterworth hospital staff.

DR. W. T. GARRETSON

Dr. W. T. Garretson who for the past nine years had been in charge of the eye, ear, nose and throat department of the Henry Ford hospital, Detroit, died very suddenly at his home 638 Collingwood avenue, Detroit, Mich., on the 17th of August. He had been apparently in good health up to the time of his death. Dr. Garretson was a graduate of the University of Iowa and had done post-graduate work at the University of Edinburgh, Scotland. He served during the war both with the British Expeditionary Forces, and later with the American Red Cross. His coming to Detroit followed the close of the war. Dr. Garretson was unmarried.

DR. ANGUS P. SUTHERLAND

Dr. Angus P. Suterland of Detroit, Mich., died Saturday September 9th at the age of thirty-nine years. The doctor was a graduate of the University of Michigan and had practised in Detroit since his graduation. His death was due to pneumonia contracted a week previous while visiting at a summer cottage near Alpena. He leaves a widow and two children. Dr. Sutherland was the son of Rev. and Mrs. D. I. Sutherland of Detroit.

DR. GEORGE P. MCNAUGHTON

Dr. George P. McNaughton of Detroit died August 21st at his summer home at Gladwin, Michigan, after an illness of only three hours. The doctor was forty-three years old. He graduated from Rush Medical college and served an internship of two years at the Cook County hospital, Chicago, after which he began practice at Sault Ste. Marie. He later practised at Standish, coming to Detroit ten years ago. During the past ten years Dr. McNaughton had been associated with Dr. Alexander Blain as chief of the Medical Department of the Jefferson Clinic. Dr. McNaughton was a member of the Wayne County Medical Society; the Michigan State Medical Society; and the A. M. A. as well as Fellow of the American College of Physicians. Eighteen years ago he married Miss Mabel Fuller of Sault Ste. Marie, who survives him. Other survivors are a daughter, Muriel Ann; two brothers, Dr. Walter McNaughton and Charles McNaughton, both of Milwaukee, and two sisters, the Misses Lillian and Alberta McNaughton of Milwaukee.

DR. REYNOLDS C. MAHANEY

Dr. Reynolds C. Mahaney, of Owosso, died after a short illness, on August 4th, and was buried on August 7th, in Oak Hill cemetery, Owosso.

Twenty-three physicians from Owosso and vicinity attended the funeral in a body. Dr. Mahaney had been Health Officer of Owosso for several years, and the offices at the city hall were closed for the funeral, and all city officers, the police force and as many firemen as could be spared, attended also.

Dr. Mahaney graduated from the University of Michigan in 1900, and has practiced in Owosso since that date. He was a member of the county, state and American medical associations, and at the time of his death was chairman of the permanent committee on Public Health of the state medical society.

The Shiawassee County Medical Society of which he was a member, passed the following resolutions:

Whereas, death has again invaded our ranks and deprived us of an honored member by the removal of our esteemed fellow-member, Dr. Reynolds C. Mahaney, therefore,

Be it resolved, that in the passing of Dr. Mahaney, our society has lost an earnest and valued member whom we shall greatly miss, and,

Resolved, that we tender to the bereaved family our deep and sincere sympathy and condolence in this their sad affliction. And may the assuaging influence of time and loving memories gently soothe their sorrow. Further,

Resolved, that a copy of these resolutions be spread upon the minutes of our society, a copy

be furnished to the bereaved family, and a copy sent to the Journal of the State Medical Society for publication.

Committee.

ALBERT E. BULSON

Albert E. Bulson was born in the state of New York August 19, 1847. His father died when he was eight years old, the mother marrying again. While still a small boy the family moved to northern Indiana. When the Civil War began he was still under fourteen years of age, but he made strenuous efforts to enlist as a soldier, but was of course rejected on account of his size and age, although he lied patriotically as to his age. Finally on one occasion he stowed himself surreptiously on a train carrying a load of volunteers to Cincinnati. The boys all wanted him and the colonel exerted his ingenuity to find a way. Finally on orders some one bought a second hand fife and getting the boy to practice at odd hours in lonely places he was enlisted as a fifer in the first call for troops while still thirteen years old.

He was in the army of the Potomac, in every battle from first Bull Run to Appomattox. He was honorably discharged July 5, 1865 as chief musician of the regiment.

At an early age he married Miss Sarah Abbott of Lawton, Mich., and graduated in medicine at the Chicago Medical College in 1868. He began practice at Gobleville, Van Buren County, Mich., practicing some years. His wife dying, he later married Miss Florence I. Breck in 1878. He later removed to Broadhead, Wisconsin, having at the time an older brother practicing at Janesville, in the same state. During this time he had taken also a general course at Bellone Medical College, N. Y. After practicing for some time in Broadhead he took a long special course on eye, ear, nose and throat in New York and in 1888 began practice as a specialist in these branches in Jackson, Mich., which he continued successfully to the day before his death, September 3, 1928, after passing by a little more than two weeks his 81st birthday. He was a fine man physically and mentally. Up to the time of his death his mind showed scarcely any signs of his advanced age. He was always a man's man, and from the time of his residence in Jackson was an enthusiastic member of the Michigan State Medical Society and of the local Society. He was high in Masonic and G. A. R. circles. He had the most prominent part in organizing the Jackson County Medical Society, the Jackson Academy of Medicine having expired some years before. He was the president of the new Society for the first two years, 1901 to 1903. He was president of the State Medical Society, and for many years Councillor for the district in which Jackson County is situated.

His second wife died in 1923. In 1925 he married Mrs. Bertha Blair, who survives him. By his first marriage he is survived by Dr. A. E. Bulson, Jr., of Ft. Wayne, Ind. By the second marriage by Mrs. Edwin A. Hooper, of Chicago; Dr. Glenn A. Bulson, Ft. Bayard, N. M., and Mrs. A. B. De La Vergne of Denver, Colo.

Dr. Bulson was a member of the Council for many years, following the re-organization of the Society in 1901. On relinquishing his office as Councilor he was elected to the office of President.

A life rich in years, service and friends was his. He rightly maintained an un-assailable place among outstanding men. He was of a character that exerted a wholesome, inspiring influence upon all fellow-men. As a profession we are vastly richer, due to his contributions and service. We revere his memory and jealously prize all that his life bequeathed.

THE TOBACCO TEST

The vast increase in cigaret smoking at the expense of pipe tobacco and cigars, will probably make the pipe-smokers a little more sulkily superior than ever. They have always been a little "pipe-conscious," so to speak, and rather uneasily anxious to explain that smoking a pipe is a job for a he-man, while the cigaret is an effeminate toy. Now that the pipe is proved by statistics to be steadily losing ground its smokers will presumably grow more gruffly masculine than before, fuming with equal parts of annoyance and thick twist as they grunt out "No, thanks—always smoke a pipe. Don't call a cigaret a smoke at all."

At the same time the auld reekies have always been in a bit of dilemma. On the one hand they want to claim that the cigaret is "pernicious" and pipe-smoking healthful; on the other they desire to prove that cigaret smoking is only trifling with tobacco, whereas it needs a great, big, virile sort of man (preferably whiskered) to deal with a rich and reeking pipe. The two ideas don't run very well together. If pipe-smoking is the healthiest way of consuming tobacco, then it ought to be recommended for invalids, while the fatal and insidious cigaret should be left to the dare-devils who don't care a puff of smoke what happens to their liver, lights, lungs, and larynx. It is, in short, the pipe-smoker who sits in a corner and mutters "Safety first" while the reckless consumer of "coffin-nails" is gaily ruining his constitution.—Manchester Guardian.

"DENICOTINED" TOBACCO DECLARED A FRAUD

"Denicotinized" or "denicotined" tobacco, which has recently appeared on the market in the form of cigarets, cigars and smoking tobaccos, is little more than a fraud, according to a report of experiments made by chemists of the Connecticut Agricultural Experiment Station. Samples of these "denicotinized" brands showed, on analysis, 72 per cent of the amount of nicotine contained in the average unprocessed brands. Some of the popular brands of cigarets and smoking tobaccos actually contained less nicotine than some of the processed brands. Nine kinds of widely advertised and well known cigarets, three kinds of cigars and four kinds of smoking tobacco were examined and compared with the alleged "denicotinized" brands. The term "denicotinized" or "denicotined" is naturally taken to mean practically free from nicotine, whereas in the brands sold under that description, the cigarets contained from 2.32 to 0.94 per cent of nicotine. The popular unprocessed cigarets examined showed from 1.28 to 2.89 per cent. Unprocessed cigars ranged from 1.16 to 1.90 per cent, the "denicotined" from 0.67 to 1.07 per cent. Smoking tobaccos unprocessed, contained from 1.45 to 2.09 per cent, the "denicotinized" from 0.97 to 2.26 per cent. Obviously it is better to buy the standard unprocessed brands which are known to have a low nicotine content, especially as the purchaser will then have no false sense of security to lull him into the consumption of a greater amount of tobacco, recommends the report.—Science Service.

COUNTY SOCIETY ACTIVITY

Revealing Achievements and Recording Service

EDITOR: Frederick C. Warnshuis, M. D.
Secretary Michigan State Medical Society

POST-GRADUATE CLINICS

The Michigan State Medical Society and the Post-Graduate Department in Medicine of the University jointly announce the following programs for the Flint, Jackson and Grand Rapids Post-Graduate Clinics. Our members are urged to note the features of each program, and to plan to attend either all of them or at least the one of nearest location. There is presented in these programs excellent opportunity to obtain much that will be of profit. They are a part of your membership benefits.

MICHIGAN STATE MEDICAL SOCIETY
AND THE
DEPARTMENT OF POST-GRADUATE MEDICINE, UNIVERSITY of MICHIGAN POST-GRADUATE CONFERENCE

Grand Rapids, Michigan, October 23-24, 1928

October 23, 1928 Program

BLODGETT MEMORIAL HOSPITAL

T. C. Irwin, M. D., Presiding.

Operative Clinic—One hour each morning between 8 and 9, in which Surgical Staff members will participate.

9:30-9:50 A. M.—Arterial Hypertension.
William Northrup, M. D.

10:00-10:20 A. M.—Breast Tumors.
Richard R. Smith, M. D.

10:20-10:40 A. M.—Toxemias of Pregnancy.
Athol B. Thompson, M. D.

10:50-11:10 A. M.—Chest Surgery.
William R. Torgerson, M. D.

11:10-11:30 A. M.—X-ray and Radium in Gynecology.
Paul W. Willits, M. D.

11:30-11:50 A. M.—Management of the Diabetic Patient with Complications.
Merrill Wells, M. D.

BUTTERWORTH HOSPITAL

R. F. Webb, M. D., Presiding.

Operative Clinic—One hour each morning between 8 and 9 by members of the Surgical Staff.

9:30-9:50 A. M.—Pyosalpingitis.
G. H. Southwick, M. D.

10:00-10:20 A. M.—Chronic Appendicitis.
W. E. Wilson, M. D.

10:20-10:40 A. M.—Acute Abdominal Lesions.
R. F. Webb, M. D.

10:50-11:10 A. M.—Fractures of Long Bones.
J. D. Vyn, M. D.

11:10-11:30 A. M.—Fractures of Skull.
F. C. Warnshuis, M. D.

ST. MARY'S HOSPITAL

William R. Vis, M. D., Presiding.

Operative Clinic—One hour each morning between 8 and 9 by members of the Surgical Staff.

9:30-10:15 A. M.—Fractures and X-ray Demonstration.
William H. Veenboer, M. D.
William A. Hyland, M. D.
W. D. Lyman, M. D.
V. M. Moore, M. D.
Louis Chamberlain, M. D.

10:40-11:00 A. M.—Pulmonary Tuberculosis.
William R. Vis, M. D.

11:00—11:20 A. M.—Empyema.
William H. Veenboer, M. D.

11:35-11:50 A. M.—Aortic Valvular Disease.
Dale Van Duzen, M. D.

11:50-12:10 P. M.—Pericardial Effusion.
John M. Whalen, M. D.

Complimentary luncheon will be served at Blodgett, Butterworth and St. Mary's Hospitals to all visiting physicians at conclusion of each morning program.

AFTERNOON SESSION

PANTLIND HOTEL BALL ROOM

Opening Statements—B. R. Corbus, Councillor.

1:30 P. M.—Various Types of Tachycardia and their Management.
M. A. Mortensen, M. D., Battle Creek.

2:00 P. M.—A Practical Method of Examination of Patients with Intestinal Stasis.
Frank Smithies, M. D., Chicago.

2:30 P. M.—Urological.
B. C. Corbus, M. D., Chicago.

3:00 P. M.—Surgery in Trauma.
Harry E. Mock, M. D., Chicago.

3:30 P. M.—Gastrorrhagia.
Frank Smithies, M. D., Chicago.

4:00-5:00—Moving Pictures—
1. Forceps Delivery with Episiotomy and Repair.
2. Treatment of Asphyxia Neonatorum.
J. P. Greenhill, M. D., Chicago.
Dr. De Lee's Clinic.

6:00 P. M.—Subscription Dinner.
B. R. Corbus, Presiding.

7:30 P. M.—Statement—H. S. Collisi, President Kent County Medical Society.

7:45 P. M.—Organizational Achievements.
F. C. Warnshuis, M. D.

8:15 P. M.—Post-Graduate Opportunities.
J. D. Bruce, M. D., Ann Arbor.

8:45 P. M.—Doctors, Patients and the Community.
M. L. Harris, M. D., Chicago.
President-Elect American Medical Association.

October 24, 1928 Program

BLODGETT HOSPITAL

9:30- 9:50 A. M.—Pernicious Anemia.
J. B. Whinery, M. D.

10:00-10:20 A. M.—Observations on Pre-natal Care.
E. B. Anderson, M. D.

10:30-10:50 A. M.—Some Phases in the Study of Sterility.
A. M. Campbell, M. D.

11:00-11:20 A. M.—Discussion of Some of the Unusual Goitre Problems.
H. J. Vanden Berg, M. D.

11:30-11:50 A. M.—Surgery of Malignancies of Face and Lips.
Ferris Smith, M. D.

BUTTERWORTH HOSPITAL

9:30- 9:45 A. M.—Diseases of Prostate.
L. M. McKinlay, M. D.

9:45-10:00 A. M.—Diseases of Kidney.
N. S. Vann, M. D.

10:20-10:35 A. M.—Foreign Bodies in the Orbit.
J. R. Rogers, M. D.

10:35-10:55 A. M.—X-ray Studies in Obstetrics.
H. S. Collisi, M. D.

10:55-11:15 A. M.—Diagnosis of Diabetes.
B. R. Corbus, M. D.

11:15-11:30 A. M.—Diagnosis of Pyloric Obstruction.
L. J. Schermerhorn, M. D.

11:45-12:05 P. M.—Post-Operative Pulmonary Lesions.
A. J. Baker, M. D.

ST. MARY'S HOSPITAL

9:30- 9:40 A. M.—Fractures of the Hip.
O. H. Gillett, M. D.

9:40- 9:50 A. M.—Fractures of the Wrist.
J. J. Rooks, M. D.

9:50-10:00 A. M.—Fractures of the Zygoma.
R. H. Denham, M. D.

10:15-10:30 A. M.—Dislocations.
Torrance Reed, M. D.

10:30-10:45 A. M.—Complications of Tonsillectomy—Lung Abscess.
D. R. Heetderks, M. D.

10:45-11:00 A. M.—Massive Lung Collapse.
V. M. Moore, M. D.

11:00-11:15 A. M.—Lipiodol in Diagnosis and Treatment of Bronchiectasis.
Carl F. Snapp, M. D.

11:15-11:30 A. M.—Pleural Effusion.
William L. Bettison, M. D.

11:45-12:00 M. —Angina Pectoris and Coronary Thrombosis.
J. W. Rigterink, M. D.

Complimentary luncheon will be served at Blodgett, Butterworth and St. Mary's Hospitals at the conclusion of each morning program.

AFTERNOON PROGRAM

PANTLIND HOTEL BALL ROOM

1:15 P. M.—Immunization of Scarlet Fever.
Guy L. Kiefer, M. D., Lansing.

1:45 P. M.—The Treatment of Cancer by Surgery, Radium and X-ray, and Electrocoagulation, and Practical Application of Each.
T. E. Jones, M. D., Cleveland.

2:45 P. M.—Remarks on Psycho-analysis, and Other Methods of Psychotherapy.
Carl D. Camp, M. D., Ann Arbor.

3:15 P. M.—Wilber E. Post, M. D., Chicago.

3:45 P. M.—Perforating Gastric or Duodenal Ulcer.
T. E. Jones, M. D., Cleveland.

4:15 P. M.—Wilber E. Post, M. D.—Chicago.

MICHIGAN STATE MEDICAL SOCIETY
AND THE
DEPARTMENT OF POST-GRADUATE MEDICINE, UNIVERSITY of MICHIGAN POST-GRADUATE CONFERENCE

Flint, Michigan, October 24-25, 1928

October 24, 1928 Program

HURLEY HOSPITAL AUDITORIUM

MORNING SESSION

10:00 A. M.—Opening Statement.
Henry Cook, Councilor.

10:15 A. M.—Thyroidism, Surgical Indications in.
Leon Bogart, M. D., Flint.

10:45 A. M.—Controllable Spinal Anaesthesia—with lantern slides.
Frank Kelly, M. D., Detroit.

11:15 A. M.—The Relationship of Proctology to Focal Infection.
L. J. Hirschman, M. D., Detroit.

11:45 A. M.—Focal Infections.
J. G. Manwaring, M. D., Flint.

AFTERNOON SESSION

1:45 P. M.—J. M. Robb, M. D., Detroit.

2:15 P. M.—Practical Methods of Examination of Patients.
Frank Smithies, M. D., Chicago.

2:45 P. M.—The Value of the Electro-Cardiograph.
W. J. Wilson, Jr., M. D., Detroit.

3:15 P. M.—Fracture.
G. C. Penberthy, M. D., Detroit.

3:45 P. M.—Gastrorrhagia.
Frank Smithies, M. D., Chicago.

4:15 P. M.—The Causes and Differential Diagnosis of Paraplegia.
L. J. Pollock, M. D., Chicago.

5:00 to 5:45—Functional Nervous Diseases.
L. J. Pollock, Chicago.

October 25, 1928

MORNING SESSION

9:00 A. M.—Dale E. Kirk, Flint.

9:30 A. M.—George Curry, M. D., Flint.

10:00 A. M.—Gynecological Lesions Due to Child Birth.
Richard R. Smith, M. D., Grand Rapids.

10:30 A. M.—The Analysis of the Gastric Content as an Aid in Diagnosis.
Elmer L. Eggleston, M. D., Battle Creek.

11:00 A. M.—A. C. Furstenburg, M. D., Ann Arbor.

11:30 A. M.—Pyloric Stenosis in Infants.
Richard R. Smith, M. D., Grand Rapids.

AFTERNOON SESSION

1:30 P. M.—Vomiting in Pregnancy.
Max Burnell, M. D., Flint.

2:00 P. M.—Physiology of Constipation.
Walter C. Alvarez, M. D., Rochester.

3:00 P. M.—Spastic Colitis and Diverticulosis.
Elmer L. Eggleston, M. D., Battle Creek.

3:30 P. M.—Urology. Hugh Cabot, Ann Arbor.

4:00 P. M.—Acute Pancreatitis.
W. H. Marshall, M. D., Flint.

4:30 P. M.—Diagnostic Dry Clinic.
Reuben Peterson, M. D., Ann Arbor.

October 24, 1928

EVENING SESSION

7:30 P. M.—M. S. Chambers, M. D., Flint.
8:00 P. M.—Organized Medicine.
F. C. Warnshuis, M. D., Grand Rapids.
8:30 P. M.—Post-Graduate Opportunities.
J. D. Bruce, M. D., Ann Arbor.
9:00 P. M.—Doctors, Patients and the Community.
M. L. Harris, M. D., Chicago.
President-Elect American Medical Association.

MICHIGAN STATE MEDICAL SOCIETY
AND THE
DEPARTMENT OF POST-GRADUATE MEDICINE, UNIVERSITY of MICHIGAN POST-GRADUATE CONFERENCE

Jackson, Michigan, October 24, 1928

PROGRAM

9:30 A. M.—Common Rectal Conditions.
Edward G. Martin, M. D., Detroit.
10:00 A. M.—Correction of Deformities.
Alfred D. La Ferte, M. D., Detroit.
10:30 A. M.—Focal Infections.
Edward G. Martin, M. D., Detroit.
11:00 A. M.—Diagnosis of Glaucoma.
A. E. Bulson, M. D., Fort Wayne.
11:30 A. M.—Blood Examinations.
H. E. Cope, M. D.—Detroit.
12:15 P. M.—Luncheon.
1:30 P. M.—Arthritis.
Philip Kruscher, M. D., Chiacgo.
2:00 P. M.—Gynecology.
Channing W. Barrett, M. D., Chicago.
2:30 P. M.—Medicine. Capps, M. D., Chicago.
3:00 P. M.—Drainage of Accessory Sinuses.
A. E. Bulson, M. D., Fort Wayne.
3.30 P. M.—Gynecology.
Channing W. Barrett, M. D., Chicago.
4:00 P. M.—Bachache.
Philip Kruscher, M. D., Chicago.
4:30 P. M.—Medicine. Capps, M. D., Chicago.

DINNER

7:45 P. M.—.....
8:45 P. M.—.....

ANNUAL MEETING

The Journal went to press 'ere our annual meeting convened. Our members will find a full report and the official minutes in the November issue.

THE CRIPPLED CHILDREN QUESTION

Until the year 1918 there was very little being done in the way of organized work for crippled children. Reverend Lloyd Douglas, pastor of the Congregational church of Ann Arbor, together with the members of his congregation, had been assisting with the cripples receiving treatment at the University hospital. They felt the need of more supporters and appealed to the men in attendance at the District Convention of Rotary clubs. Rotary clubs have been staunch supporters of crippled children work since that date. Through their efforts, many children have been persuaded to submit to hospitalization and have come to bless the day when lay people banded themselves together for the aid of cripples. The Rotarians interested in this problem is one of service to their fellowmen and to their communities.

Countless numbers of crippled children come from families who are ignorant of the modern methods of science and surgery and the benefits which may be derived therefrom. Doctors must sit in their offices and wait for business to present itself. Lay people can go out among the sick and suffering and induce them to apply for treatment after first convincing the families that assistance is within reach. This has been the program of Rotary clubs. Their members arrange for Crippled Children Clinics, bring the children in to the place of examination, visit the homes afterward and convey the children to surgeons or hospitals for treatment.

It is a Big Brother movement, it covers much more, even, than the hospitalization of cripples. It extends through the period of rehabilitation to the time when an individual is treated and trained to go to work. It provides a job for him either in the business establishment of the Rotarian, or through his influence, in some other suitable place.

Science and surgery can do much today for the physically handicapped but after the physical restoration, the responsibility of the medical profession ends. It still remains for the layman to provide employment for those not financially able to support themselves without such assistance.

Prominent Rotarians formed the *Michigan Society for Crippled Children*, a branch of the *International Society for Crippled Children*. Any person interested in the welfare of cripples may become a member of the society at an annual fee of one dollar per year.

The Michigan Society for Crippled Children was influential in having passed by the 1927 State Legislature, the Crippled Children Law, Act No. 236 of the Public Acts of 1927. This law is a big step in the right direction. No one considers it perfect, it was designated as an entering wedge for the purpose of studying the problem and making recommendations to meet the needs of cripples in the future.

The commission members are lay people. They endeavor to administer the law as it stands for the good of all concerned. First consideration is always given to the crippled children themselves, next in order come the personal and private rights of the families of cripples.

No family is forced to submit to the hospitalization of its crippled members, rather are they extended a course of education as to the possibilities of modern hospital treatment and its happy results. The rights of the people to seek advice from surgeons who specialize in crippled children treatment will always be conserved. The relationship between the patient and his family physician will not be interfered with. It is the policy of the commission to go into consultation with the patient, his family, and his family physician, in order to determine the best policy to pursue for the child. Members of the commission are:

Hugh Van de Walker, Chairman; Ypsilanti, Michigan.
Mrs. C. L. Barber, Lansing, Michigan.
Mrs. L. James Bulkley, Detroit, Michigan.
Vincent Giuliano, Detroit, Michigan.
Albert L. Miller, Battle Creek, Michigan.

The policies of the commission and the actual working out of various phases of the law will be treated in succeeding articles:

I. Organization and conducting of clinics.

II. Hospitalization of cripples under the new law.
III. Education of cripples.
IV. The program of prevention.
V. The future of the crippled children of Michigan.

REGULATION OF THE HEALING ART BY LAW

H. E. RANDALL, M. D.

The following compilation by Dr. H. E. Randall is most interesting. We are commending it to our readers.

Earliest Code—Code of Hammurabi, Babylonian 2200 B. C.

By the divine favor I am Hammurabi, the exalted King, the Worshiper of the Supreme Deity.

6. If a man has stolen property from the Bod or palace, that man shall be put to death.

22. If anyone has committed a robbery and is caught, he shall be killed.

195. If a son has struck his father, one shall cut off his hands.

200. If he knocks out the teeth of a man who is equal, his teeth one shall knock out.

202. If anyone has injured the strength of a man who is high above him he shall publicly be struck with sixty strokes of a cowhide whip.

204. If he injured the strength of a freedman one shall cut off his ear.

197. If one break the limb of a free born man, his limb one shall break.

215. If a doctor has treated a man for a severe wound with a lancet of bronze and has cured the man or has opened a tumor with a lancet of bronze and has cured the man's eye, he shall receive ten shekels of silver.

216. If he was a freedman he shall receive five shekels of silver.

217. If it was a man's slave, the owner of the slave shall give the doctor two shekels of silver.

220. If he has opened his tumor with a bronze lancet and has ruined his eye, he shall pay half of his price in money.

221. If a doctor has cured the broken limb of a man, or has healed his sick body the patient shall pay the doctor five shekels of silver (1.00).

218. If a physician has treated a free born for a severe wound with a lancet of bronze and has caused the man to die, or has opened a tumor of the man with a lancet of bronze and has destroyed his eye, his hands one shall cut off.

219. If a doctor has treated the slave of a freedman for a severe wound with a bronze lancet and has caused him to die, he shall give back slave for slave.

222. If it be a freedman he shall give three shekels of silver (60c).

226. If a barber surgeon without the consent of the owner of a slave has branded the slave with an indelible mark, one shall cut off the hands of that barber.

THE OATH

I swear by Apollo the physician, and Esculapius and Health, and Allheal, and all the gods and goddesses, that, according to my ability and judgment, I will keep this oath and this stipulation—to reckon him who taught me this art equally dear to me as my parents, to share my substance with him, and relieve his necessities if required; to look upon his offspring in the same footing as my own brothers, and to teach them this art, if they shall wish to learn it, without fee or stipulation; and that by precept, lecture, and every other mode of instruction, I will impart of knowledge of the art to my own sons, and those of my teachers, and to disciples bound by a stipulation and oath according to the law of medicine, but to none others. I will follow that system of regimen which, according to my ability and judgment I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous, I will give no deadly medicine to any one if asked, nor suggest any such counsel; and in like manner I will not give to a woman a pessary to produce abortion. With purity and with holiness I will pass my life and practice my art. I will not cut persons laboring under the stone, but will leave this to be done by men who are practitioners of this work. Into whatever houses I enter, I will go into them for the benefit of the sick, and will abstain from every voluntary act of mischief and corruption; and, further from the seduction of females or males, of freemen and slaves. Whatever, in connection with it, I see or may hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret. While I continue to keep this oath unviolated, may it be granted to me to enjoy life and practice of the art, respected by all men, in all times; but should I trespass and violate this oath, may the reverse be my lot!

Law of the Emperor Frederick 11. (1194-1250) regulating the practice of medicine.

"While we are bent on making regulations for the common weal of our loyal subjects we keep ever under our observation the health of the individual. In consideration of the serious damage and the irreparable suffering which may occur as a consequence of the inexperience of physicians, we decree that in future no one who claims the title of physician shall exercise the art of healing or dare to treat the ailing, except such as have beforehand in our University of Salerno passed a public examination under a regular teacher of medicine and been given a certificate, not only by the professor of medicine, but also by one of our civil officials, which declares his trustworthiness of character and sufficiency of knowledge. * * * Violation of this law is to be punished by confiscation of goods and a year in prison for all those who in future dare to practice medicine without such premission from our authority.

"Since the students cannot be expected to learn medical science unless they have previously been grounded in logs, we further decree that no one be permitted to take up the study of medical science without beforehand having devoted at least three full years to the study of logic. After three years devoted to these studies he (the student) may, if he will, proceed to the study of medicine, provided always that during the prescribed time he devotes himself also to surgery, which is a part of medicine * * * After having spent five years in study he shall not practice medicine until he has a full year devoted himself to medical practice with advice and under the direction of an experienced physician. * * * We also decree that no surgeon shall be allowed to practice, unless he has written certificate, which he must present to the professor in the medical faculty, stating that he has spent at least a year at that part of medicine which is necessary as a

guide to the practice of surgery, and that, above all, he has learned the anatomy of the human body at the medical school, and is fully equipped in this department of medicine, without which neither operation of any kind can be undertaken with success nor fractures be properly treated. * * * We also decree by the present law that no one in the kingdom except in Salerno or in Naples (in which were the two universities of the kingdom) shall undertake to give lectures on medicine or surgery, or presume to assume the name of teacher, unless he shall have been very thoroughly examined in the presence of a government official and of a professor in the art of medicine. * * * Every physician given a license to practice must take an oath that he shall faithfully fulfill all the requirements of the law, and in addition that whenever it comes to his knowledge that any apothecary has for sale drugs that are of less than normal strength, he shall report him to the court, and besides that he shall give his advice to the poor without asking for any compensation." * * * He (the regularly licensed physician) must not enter into any business relations with the apothecary nor must be taken any of them under his protection nor incur any money obligations in their regard. Nor must any licensed physician keep an apothecary's shop himself. * * * We decree also that the growers of plants meant for medical purpose shall be bound by a solemn oath that they shall prepare their medicines conscientiously according to the rules of their art, and so far as it is humanly possible that they shall prepare them in the presence of the inspectors. Violations of this law shall be punished by the confiscation of their movable goods. If the inspectors, however, to whose fidelity to duty the keeping of the regulations is committed should allow any fraud in the matters that are entrusted to them, they shall be condemned to punishment by death."

In Paris the divorce of medicine and surgery took place. Minor surgery was in the hands of barbers who performed minor operations, such as bleeding. The important operation by master surgery.

In 1506 the Paris Faculty took barber surgery under wing in order to spite the surgeon proper, of whom it was jealous and later the surgeon of long robe, having failed to become separate faculty, to make the best of the bad bargain by coming under sway of physicians.

Following the teachings of Avicenna, to the effect that surgery was an inferior branch of medicine.

In France an edict of Tours in 1163 specifically restricted surgery to barbers and mountebanks.

In England in 1745 act was passed making college of surgeons and corporation of barbers, separate bodies and limiting surgery to membership in colleges of surgeons, physicians and apothecaries.

The apothecaries of early 17th century were still combined with the grocers. The Faculty of Medicine the right to practice medicine, pharmacy, and surgery. The assistants and apprentices of these medical men were called apothecaries and they performed minor surgical and medical duties, compounded their masters' prescriptions, and prepared the stock supplies of medicine, "Grocers", says King James, "are merchants" the business of the apothecary is a mystery.

At common law the medical practitioner had no remedy at law to recover remuneration for his services. He could only expect an Honorary reward. This rule was never in force in the United States. In territorial days of Michigan the power of granting and revoking license to practice medicine was held by the Michigan Medical Society organized in 1819.

Supreme Court of the United States.

Dent vs. West Virginia. Decided March 15, 1882.

The Defendant—since the year 1876 continously to the present time, and has during all said time enjoyed a lucrative practice, publicly, professing to be a physician, prescribing for the sick, and appending to his name the letters M. D.—that he has no certificate, as required by section 9, chapter 93, Acts of the Legislature of West Virginia, passed March 15, 1882, but has a diploma from the "American Medical Eclectic College of Cincinnati."

Dent on the ground that the Act of the Legislature was unconstitutional and void so far as it interfered with his vested right in relation to the practice of medicine.

The Unconsititutionality asserter consists in its alleged conflict with the clause of the Fourteenth Amendment, which declares that no state shall deprive any person of life, liberty or property without due process of law—the denial to the defendant of the right to practice his profession without the certificate required constituting the deprivation of his vested right, and estate in his profession, which he had previously acquired. The nature and extent of the qualifications required must depend primarily upon the judgment of the state as to their necessity. If they are appropriate to the calling or profession, and attainable by reasonable study or application, no objection to their validity can be raised because of their stringency or difficulty. Due consideration therefore, for the protection of society may well induce the state to exclude from practice those who have not such a license, or who are found upon examination not to be fully qualified. We preceive nothing in the statute which indicates an intention of the Legislature to deprive one of any of his rights. No one has a right to practice medicine without having the necessary qualifications of learning and skill; and the statute only requires that whoever assumes, by offering to the community his services as a physician, that he possesses such learning and skill, shall present evidence of it by a certificate or license from a body designated by the state as competent to judge of his qualifications. Judgment affirmed.

Supreme Court of the United States.

Hawker vs. People of the State of New York. Decided April 18, 1898.

"The legislature of a state may enact that one who had been convicted of crime shall no longer engage in the practice of medicine.

"Such legislation is not an additional punishment for past offenses or an expost facto law, but prescribes the qualifications for the position and the appropriate evidence of such qualifications.

"Care for the public health is something confessedly belonging to the domain of that power. (police power). The physician is one whose relations to life and health are of the most intimate character. It is fitting, not merely that he should possess a knowledge of disease and their remedies, but also that he should be one who may safely be trusted to apply those remedies. Character is as important a qualification as knowledge, and if the legislature may properly require a definite course of instructions, or a certain examination as to learning, it may with

equal propriety prescribe what evidence of good character shall be furnished. These propositions have been often affirmed.

"The door stands open to all who possess the requisite age and good character, and can stand the examination which is exacted of all applicants alike.

"It is not open to doubt that the commission of crime, the violation of the penal laws of a state, has some relation to the question of character. It is not, as a rule, the good people who commit crime. When the legislature declares that whoever has violated the criminal laws of the state shall be seemed lacking in good moral character it is not laying down an arbitrary or fanciful rule."

Mr. Justice Harlan dissenting.

If the statute in force when the offense of abortion was committed had provided that in addition to imprisonment in the penitentiary, the accused, if convicted, should not thereafter practice medicine, no one, I take it, would doubt that such prohibition was a part of the punishment prescribed for the offense.

Supreme Court of the United States.

John A. Watson vs. State of Maryland. Decided May 31, 1910.

Constitutional law—due process of law—notice. A conviction for practicing medicine without registration, contrary to Md. Code 1904 art. 43 *99, is not wanting in due process of law because the accused was not given the notice required by *80 of that article to be sent to unregistered physicians, where he had a trial before a court and jury under Maryland statutes was proceeded against under the forms provided for by the laws of that state, and the section under which the conviction was has been construed by the highest court of the state completely to define the offense without resorting to the necessity of notifying unregistered physicians before they become liable to the penalties for practicing without registration, Constitutional law—equal protection of the laws—registration of physicians—classification—police power.

The exemption from the provisions of Md. Code 1904, art. 43, *83, for the registration of physicians, in favor of those physicians who were then practicing in the state, and had so practiced prior to January 1, 1898, and could prove by affidavit that within one year of said date they had treated at least twelve persons in their professional capacity, in not such an unreasonable and arbitrary classification as renders the statue invalid, as denying the equal protection of the laws, but is within the discretion vested in the legislation in exercising the police power.

The contention of the plaintiff in error is that there being no charge in the indictment, nor proof in the case, that he was furnished with this notice, his conviction was without due process of law.

It is well settled to require discussion at this day that the police power of the states extends to the regulation of certain trades and callings, particularly those which closely concern the public health. There is perhaps no profession more properly open to such regulation than that which embraces the practitioners of medicine. Dealing, as its followers do, with the lives and health of the people, and requiring for its successful practice general education and technical skill, as well as good character, it is obviously one of those vocations where the power of the state may be exerted to see that only properly qualified persons shall undertake its responsible and difficult duties.

Supreme Court of the United States.

Ira W. Collins vs. State of Texas. Decided February 19, 1912.

The ruling of the state court that osteopaths are persons practicing medicine, within the meaning of Tex. Laws 1907, chap. 123 providing for licensing and registering medical practitioners, will be followed by the Federal Supreme Court in determining the constitutionality of such statute on writ of error to the state court.

Unied States Supreme Court.

Crance vs. Hiram Johnson 339—*January* 8, 1917.

On Appeal to review decree denying injunction to restrain enforcement of requiring drugless to pass examination. There were three class certificates; for physicians, drugless, and chiropody. It was claimed act discriminated in treatment by prayer, by faith, mental suggestion and mental adaptation, lying on of hands, annointment in the holy oil, and kindred treatment.

"The exemption in favor of persons treating the sick by prayer—does not render the status invalid as denying the equal protection of the laws guaranteed by U. S. Const. 14th Amed.

"The state's police power extends—that drugless practitioners employing faith, hope, and the processes of mental suggestion and mental adaptation in the treatment of disease, shall have completed a prescribed course of study and passed an examination.

"We cannot say that the state's estimate of the practices and of their differences is arbitrary, and therefore beyond the power of government. And this we should have to say to sustain the contentions of complaint, and say besides, possibly against the judgment of the judgment of the state, that there was not greater opportunity for deception in complainant's practice than in other forms of drugless healing."

Supreme Court of the United States.

Linder vs. United States of America. Decided April 13, 1925.

Food and drugs—liability under Harrison Act for administering drug to addict.

A physician cannot be prosecuted under the Harrison Narcotic Law, which is a pure revenue measure, for delivery to an addict, for self-administration, of four small tablets of morphine or cocaine, for relief of conditions incident to the addiction.

Petitioner,—a duly licensed and registered physician, without an official written order therefore, knowingly, wilfully, and unlawfully did sell, barter, and give to Ida Casey one tablet of morphine and three tablets of cocaine. He knew she was addicted to habitual use of these drugs and did not require administration of either because of any disease other than such addiction.

Obviously, direct control of medical practice in the states is beyond the power of the Federal government. Incidental regulation of such practice by congress through a taxing act cannot extend to matters plainly inappropriate and unnecessary to reasonable enforcement of a revenue measure.

The narcotic law is essentially a revenue measure, and its provisions must be reasonably, applied with the primary view of enforcing the special tax. We find no facts alleged in the indictment sufficient to show that petitioner had done anything falling within definite inhibitions

or sufficient materially to imperil orderly collection of revenue from sales. Federal power is delegated, and its prescribed limits must not be transcended even though the end seems desirable.

United States Supreme Court.

Reetz vs. Michigan. Decided February 23, 1903.

Reetz was practicing before Act of 1899 (237) and failed to register. Argued that act conferred judicial power to state board. Decision was the board in so acting did not exercise judical power, as that phrase is commonly used.

"The ascertainment and determination of qualifications to practice medicine by a board of competent experts, appointed for that purpose is not the exercise of a power which appropriately belongs to the judical department of the government."

Also "that any legal preceeding enforced by public authority, whether sanctioned by age and custom, or newly devised in the discretion of the legislative power, in furtherance of the general public good which regards and preserves these principles of liberty and justice, must be held to be due process of law.

"It is further insisted that having once engaged in the practice, and having been licensed so to do, he had a right to continue in such practice, and that this statute was in the nature of an ex post facto law. The case of Hawker vs. New York, 170 U. S., 189, 42 L. ed. 1002 18 Sup. Ct. Rep. 573, is decisive upon this question. The statute does not attempt to punish him for any past offense, and in the most extreme view can only be considered as requiring continuing evidence of his qualifications as physician or surgeon."

Missouri Ex. Rel. Hurtwitz vs. North.

Argued April 12, 1926.

Mr. Justice Stone delivered the opinion of the court. Plaintiff in error was a physician licensed to practice by the state board of health of Missouri. On complaint made to the board, and after notice and hearing, his license to practice was revoked on the ground that he had unlawfully produced an abortion.

2. Constitutional law—due process—requiring production of evidence by deposition.

Requiring a physician to produce his testimony by deposition to the exclusion of witnesses in person, in a proceeding to revoke his license, does not unconstitutionally deprive him of due process of law.

3. Appeal—effect of state decision. Upon writ of error to review a judgment of a state court, the Supreme Court of the United States is bound by the construction by the state court of a state statue.

Supreme Court of Wisconsin. April 3, 1923.

1. Physicians and surgeons—Chiropractor is required only to exercise skill of that school of treatment.

2. Physicians and surgeons—Chiropractors are required to exercise skill in diagnosis.

Section 14351 provides and makes them liable for malpractice. So far as here applicable, it reads:

"Any person practicing medicine, surgery, osteopathy, or any form of system of treating the afflicted without having a license or a certificate of registration authorizing him so to do, shall not be exempted from, but shall be liable to all the penalties and liabilities for malpractice; and ignorance on the part of any such person shall not lesson such liability for failing to perform or for negligently or unskillfully performing or attempting to perform any duty assumed, and which is ordinarily performed by licensed medical or osteopathic physicians, or practitioners of any other form or system of treating the afflicted."

Osteopaths.

(6743) Sec. 4. The certificate provided for in section two of this act shall entitle the holder thereof to practice osteopathy in the state of Michigan in all of its branches as taught and practiced by the recognized colleges or schools of osteopathy, but it shall not authorize him to practice medicine within the meaning of act number two hundred thirty-seven of the Public Acts of eighteen hundred ninety-nine, or acts amendatory thereto: Provided, that nothing in this act shall be construed as to prohibit any legalized osteopathic physician in this state from practicing medicine and surgery after having passed satisfactory examination before the state board of medical examiners.

(6746) Sec. 7. This act shall not apply to any legally qualified medical practitioner practicing medicine and surgery, under act number two hundred thirty-seven of the Public Acts of eighteen hundred ninety-nine or acts amendatory thereto, nor shall this act apply to masseurs or nurses practicing massage or manual Swedish movements in this state.

Michigan Medical Act—Act 237, 1899.

3. The board is authorized to issue a license or certificate of registration to any person who desires to practice a system of treatment of human ailments or diseases, and who does not in such treatment use drugs or medicines, internally or externally, or who does not practice surgery or midwifery, under the provisions of this act: Provided, that the applicant for such license of certificate of registration shall have an accredited diploma from a high school, academy, college or university, or an equivalent credential, or shall pass an examination before the board of preliminary examinery, such examination to be equivalent to a recognized high school diploma, as provided in subdivision one of this section, and shall pass an examination before the board upon the following subjects: Anatomy, histology and embryology, physicology, chemistry, bacteriology, pathology, diagnosis, hygiene and public health.

A practitioner under subdivision shall not be permitted to use in any form the title of "doctor" or "professor" or any of their abbreviations or any other sign or appellation to his or her name which would in any way designate him or her as a physician or surgeon.

Employing or being employed by any capper, solicitor or drummer for the purpose of securing patients; or subsidizing any hotel or boarding house with a like purpose, or paying, or offering to any person, money or any other thing of value with a like purpose, or advertising to do so in any form whatsoever; or the divsion of fees in a consultation or a reference of a patient to a physician referring the case, without the knowledge of the patient or the persons concerned in the payment thereof.

Being guilty of offenses involving moral turpitude, habitual intemperance, or being habitually addicted to the use of morphine, opium, cocaine, or other drugs having a similar effect; or of prescribing or giving away any substance or com-

pound containing alcohol or drug for other than legal and legitimate therapeutic purposes.

The creation of such misdemeanor by this act shall not be construed to supersede any existing remedy or punishment, whether civil or criminal, for any act embraced within the provisions of this act, but shall be construed to be in addition thereto.

Definition of Practice of Medicine, "Practice of medicine shall mean the actual diagnosing, curing or relieving in any degree, or professing to attempting to diagnose, treat, cure or relieve any human disease, ailment, defect, or complaint, whether of physical or mental origin, by attendance or by advice, or by prescribing or furnishing any drug, medicine, appliance, manipulation or method, or by any therapeutic agent whatsoever.

(6737) Section 1. Any physician or surgeon engaged in the practice of medicine in this state, who shall employ any solicitor, capper, or drummer for the purpose of procuring patients or who shall subsidize any hotel or boarding house, or who shall pay or present to any person money or other valuable gift for bringing patients to him, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not more than two hundred dollars or by imprisonment in the county jail for a period not exceeding six months, or by both such fine and imprisonment in the discretion of the court.

Supreme Court of Michigan.

People vs. Lewis. Decided December 22, 1925.

It is within legislative power to require persons practicing treatment of human ailments or diseases without the use of drugs to possess knowledge of organic structure, intimate structure of tissues, embryonic evolution, functions of the body, molecular and atomic structure of bodies, micro-organisms, science of diseases, morbid processes observable in various diseases of organs, recognition of diseases by its symptoms, science of health, and efforts made and measures and precautions deemed advisable for the promotion and protection of public health.

The courts will not indict the medical profession of design to annihilate the system of chiropractic adjustment, and the legislature of supinely surrounding the lawmaking power in aid thereof, because of the passage of the medical practice act requiring chiropractors to pass an examination before a medical board in subjects which no school of chiropractice teaches, but knowledge of which the legislature deems necessary by persons practicing treatment of human ailments or diseases.

It may be that no chiropratic school teaches all the subjects mentioned and chiropractors feel that a knowledge thereof is unnecessary and unused in their school of practice, but this affords no reason for requiring the legislature, in recognition thereof, to enact no law not in conformity therewith.

No school may fix a standard of education, and thereby entitle its graduates to practice any branch of the healing arts, regardless of legislation accord, with only what he has been taught. The law recognizes chiropractice adjustments or treatments and fixes the standard of knowledge deemed essential to a proper practice thereof. The legislature took a comprehensive view of the public welfare in regulating the practice of medicine. This practice is well stated in our former decisions.

It is of no consequence that th edefendant abstained from the use of the words "diagnosis", "treatment," or "disease," in description of what he did, and employed the terms "analysis," "palpation" and "adjustment." The acts which he did and their manifest design are to be examined rather than the words used.

The court quoted for Johnson vs. Texas.

"In the interest of the public health and the general welfare of the people, the legislature is authorized to prescribe such regulations to be conformed to by persons seeking to enter the practice of medicine as in its judgment will secure, or tend to secure, the people against the consequences of ignorance and incapacity, as well as of deception and fraud, and this without regard to any special system of practice or any established school of medicine.

"In order that assurance may be had that the one who treats diseases has this requisite qualification, the state has the undoubted right to prescribe a general preparation to be made by one entering such profession, and also to prescribe that he shall have a knowledge of what the legislature may deem the necessary scientific branches of medicine of such profession .

"The Michigan medical practice act does not undertake to prescribe treatment or limit the practice of medicine to any school.

"The power of the state to prescribe such restrictions and regulations in the practice of medicine as, in the judgment of the legislature, shall protect the people from the consequences of ignorance or incapacity, as well as deception and fraud, has been vindicated too often to require citation of authority.

"What we have said is not in disparagement of drugless healing. We decide only the legal questions presented and leave the policy of the law, within legitimate limits, to the legislative power."

The Amended Medical Law of Indiana.

Effective May 17, 1927.

The attorney general, prosecuting attorney, the state board of medical registration and examination, or any citizen of any county where any person shall engage in the practice of medicine as herein defined, without having first obtained a license so to do, may, in accordance with the laws of the state of Indiana governing injunctions, maintain an action in the name of the state of Indiana to enjoin such person from engaging in the practice of medicine, as herein defined, until a license to practice medicine be secured.

And any person who has been so enjoined who shall violate such injunction shall be punished for contempt of court: Provided, that such injunction shall not relieve such persons so practicing medicine without a license from a criminal prosecution therefor as is now provided by law, but such remedy by injunction shall be in addition to any remedy now provided for the criminal prosecution of such offender. In the basic science examination, it is proposed to forbid appointment to board of anyone connected with school teaching, healing art. The examination is for applicants not less than twenty-one years of age, good character, accredited to high school, or equivalent, and examination in anatomy, physicology, chemistry, bacteriology, pathology, diagnosis, and hygiene.

GRATIOT-ISABELLA-CLARE COUNTY

The September meeting of the G. I. C. was held at the Park House, St. Louis, Thursday, September 6th. Twenty members and guests had supper together at 6:30, after which President

Barstow introduced Dr. John L. Chester of Detroit who read a paper on Rheumatic Heart disease. The doctor covered the subject very thoroughly, after which several members asked questions, which brought out interesting points in detail. One patient with Rheumatic Heart disease was shown for a clinic.

E. M. Highfield, Secretary.

NEWAYGO COUNTY

Regular meeting of the Newaygo County Medical Society met with Dr. and Mrs. W. H. Barnum at their cottage on Fremont lake, Thursday August 2, 1928, at 4:40 P. M.

The meeting was called to order by the president, Dr. H. R. Moore, and Dr. Wm. LeFevre of Muskegon was called and gave a very interesting talk on the different phases of diabetes, including symptoms, diet and treatment.

This being ladies' night the members and ladies then repaired to the dining room where a bounteous chicken dinner was served. Nine members were present.

Meeting was then adjourned.

W. H. Barnum, M.D., Secretary.

LIVINGSTON COUNTY

Meeting held at Chemung Hills Country club for dinner, after which business at hand was proceeded to be handled.

Dr. J. D. Bruce, Councillor, discussed the possibility and feasibility of a Livingston County Medical Society, bringing out and stressing the point in its favor, namely, the clinical material which will be brought to hand by the opening of the new hospital and the enlarging of the State Sanitorium for Tuberculosis.

The situation was discussed by Drs. Huntly and Browne, and Cunningham and it was decided to go ahead with the organization.

Dr. Bruce appointed Dr. Huntly temporary chairman for the election of officers. Dr. Davis was appointed temporary secretary.

On motion of Dr. Browne and second of Dr. Cummingham the temporary officers were elected for the coming year permanent office.

On motion of Dr. Browne and second of Dr. Cunningham, Dr. Hendron was elected to office of vice president.

No committees were appointed at this session, it being understood that the officers were to act as a body for all committees until further appointments were made.

The next meeting is to be held in August after the completion of the hospital.

Roll call as follows:

Browne, Cunningham, Davis, Huntley, Huntington, Hendron, H. Sigler.

Dr. Huntington was appointed delegate to the state convention and Dr. H. Sigler alternate.

L. A. Davis, M.D.

GRAND TRAVERSE-LEELANAU CO.

I wish to report the last two meetings of the Grand Traverse-Leelanau County Medical Society.

Regular meeting of the Grand Traverse-Leelanau County Medical Society was held June 5, 1928, at the J. D. Munson hospital.

President Edwin Rinear read a letter from Dr. Burr relative to a history of the local society; this matter was placed on file for the time being.

He then read a letter from Dr. G. A. Holliday who wished to resign from the secretaryship because of his recent injury which will probably incapaciate him for some time. With considerable regret, his resignation was accepted.

Moved by Gauntlett, seconded by Holdsworth, that Dr. E. F. Sladek be elected the new secretary. Passed.

The meeting was then adjourned.

The regular summer picnic meeting of the Grand Traverse-Leelanau County Medical Society was held at the Sladek's cottage on Long Lake on August 7, 1928.

The hosts of the evening were Dr. and Mrs. H. B. Kyselka and Dr. and Mrs. E. F. Sladek, who provided the following dainty menu: One whole baked ham, six pounds of broiled weenies, a bushel of potatoe salad, combination salad, creamed peas, bohemian sourkraut, swiss cheese, coffee, bohemian kolaches, and watermelon. Eighteen members did justice to the feed and then tried to do some business.

Dr. Don M. Griswold of Lansing spoke on "The Policies of the Michigan State Department of Health."

Dr. J. D. Munson gave a short talk about his winter in California, mentioning some of the work he saw in their larger hospitals.

Dr. B. Sladek of Cicero, Illinois, spoke of the practice of medicine in the large cities encountering the competition of free clinics of all sorts.

Dr. George F. Inch was elected delegate, and Dr. E. L. Thirlby as alternate, to the annual meeting of the State Society.

The meeting was reluctantly adjourned at a late hour.

I wish further, to give you a list of officers of the society, which were elected December 6, 1927, but which were not reported to you.

President, Dr. Edwin Rinear.
Vice President, Dr. Ralph Kernkamp.
Secretary-Treasurer, E. F. Sladek.
Medico-Legal Counsel, Dr. F. P. Lawton.

Thanking you for all past favors, and with the deepest regret that you were unable to come to Traverse to participate in our picnic feed, which was partially planned for you, I am

Fraternally yours,

E. F. Sladek, M.D., Secretary.

OAKLAND COUNTY

A meeting of the society will be held on Friday evening, September 21st, at the Old Mill Tavern, Waterford, Mich. Dinner will be served at 6:30.

Following dinner Dr. E. Kyle Simpson, Pontiac, will address the society on "Medical Practice in China—Ancient and Modern."

The following applications for membership will be balloted on:

Dr. J. J. Goldsberry, Pontiac; Howard University, 1926.

Dr. L. Warren Gatley, Pontiac; St. Louis University, 1925.

Dr. L. Thomas O'Brien, Pontiac; University of Illinois, 1914.

Dr. L. C. Sheffield, Pontaic; University of Chicago (Rush) 1925.

Dr. Alexander M. Carr, Royal Oak; University of Pennsylvania, 1918.

Dr. Morrell M. Jones, Pontiac; Detroit College of Medicine & Surgery, 1915 (by transfer from Wayne County Medical Society).

The following applications for membership by transfer has been received and referred to the board of directors:

Dr. James H. McCall, Pontiac; Detroit College of Medicine & Surgery, 1911 (from Marshall County, W. Va. Medical Society).

Members of the society may obtain the official automobile insignia from the Treasurer, Dr. I. C. Prevette, 22½ E. Huron street, Pontiac. Price $2.00 each; $4.00 for two. Most physicians use them on both front and rear of the car, and by so doing you are assured of every courtesy from traffic officers, and that you will not be molested for overtime parking on the streets of Pontiac.

Dr. B. C. H. Spencer, Rochester, has been nominated for the office of coroner.

Other nominations of interest to the society:

State Senator—Charles A. Sink, Republican, Ann Arbor; Charles P. Webster, Democrat, Pontiac.

Legislature, First District—James A. Lawson, Republican, Royal Oak.

Legislature, Second District—P. J. Miller, Republican, Walled Lake; Mark B. Armstrong, Democrat, Pontiac.

Canada seems to have the call as the place to spend a vacation. Dr. and Mrs. H. A. Sibley and family have recently returned from a trip to Montreal, going by way of the Canadian Soo, driving as far north as Cochrane and Lake Temiskaming.

Dr. and Mrs. A. V. Murtha made a ten day motor trip through Canada, visiting the Toronto Exposition, Montreal, Quebec and St. Anne de Beaupre.

Dr. and Mrs. B. M. Mitchel and family spent a two weeks' vacation at Park Hill, Ont.

Dr. and Mrs. J. W. Fox are on a motor trip through the eastern states.

C. A. Neafie, M.D., Secretary.

COMMON ERRORS IN CHOLECYSTOGRAPHY

The absence of a shadow after intravenous administration of the drug is regarded as one of the most certain indications of abnormality, denoting blockage of the ducts, a vesicle full of stones or debris, or an injured mucosa. But herein lie many possibilities of error, says Lester R. Whitaker, (Journal A. M. A.) In the first place one must be sure that there is no shadow, or that none can be produced. Sometimes a very faint shadow on the film escapes the eye, or poor management of the patient or faulty technic in radiography may fail to bring out the shadow. Since the gallbladder may reside anywhere in the right side of the abdomen it may be missed in the exposure; it may be so far off center that details will be obscure, or it may be overshadowed by the spine. The gallbladder should be located as nearly as possible by percussion and palpation of the liver, and the tube centered over it. It must be remembered that a deep inspiration lowers the gallbladder from 2 to 3 inches. Motion of the patient during exposure, straining to hold a deep breath, or intestinal peristalsis may erase delicate shadows. If there is a good deal of intestinal gas, an enema should be given. Careful roentgenologic technic is of extreme importance. Poor management of the patient with regard to feeding may result in failure to obtain a shadow and bring about an erroneous diagnosis. A faint shadow is another important criterion of abnormality in the gallbladder. But this can also be due to insufficient penetration or exposure of the subject, ineffective development of the film, or emptying of the gallbladder when it should have been filling with dye, as a result of ill advised feeding. The gallbladder can be diseased to the point of cholesterosis and stone formation and still preserve normal concentrating and contractile power. Mottling or inequalities of density of the shadow, if definite and constant in succeeding films, and if differentiated from gas in the duodenum or colon, almost invariably means stones. Sometimes the question of mottling of a shadow is settled by giving a fat meal. The resulting contraction of the gallbladder often lifts it up underneath the liver, away from the gas-filled colon and duodenum, where mottling is significant. Furthermore, the volume of opaque material may be reduced enough to allow shadows of stones of low density, not at first noted, to be brought out by contrast. Giving a fat meal a few hours before the administration of the drug has been advocated on the ground that this empties the gallbladder and allows more effective filling with the dye, but it is better not to give a fat meal before cholecystography, else the gallbladder may be emptying when it should be filling with dye. Pribaum has advocated the administration of solution of pituitary to empty the gallbladder before the dye is given. The first consideration is to be sure that the gallbladder is not emptying when the drug is given; the second is that preferably it shall not contain overconcentrated bile. With the oral method, two conditions are essential for the best results: (a) Digestion must be absent; (b) the drug must be protected from the action of the stomach and vice versa. If the gallbladder is reduced to one-tenth or one-twentieth its original volume in from one to six hours after a fat meal, one may be certain that its wall is not severely diseased and that it contains very little foreign material, probably none.

FOOD IMPORTANT "MEDICINE" FOR MENTAL PATIENTS

Good food and plenty of it is real medicine for patients suffering from mental and nervous diseases, according to Dr. David H. Keller, medical director of the Central Louisiana State Hospital. Dr. Keller, speaking before the American Psychiatric Association, Minneapolis, described an unusual method of feeding the mentally sick which has been tested and proved remarkably effective.

Patients in the Louisiana hospital are fed three generous sized, nourishing meals a day, chiefly rice, sweet potatoes, cane syrup, corn and other products of the big hospital farm. Every patient is weighed each month, and if he is underweight he gets an extra meal a day, under the direction of the ward physician.

Patients suffering from chronic pellegra get still more attention, with doses of fresh fruit, lemonade, milk, eggs, and oatmeal. Some of the violent patients, whose activity burns up so much energy that it seems impossible to keep them properly nourished, are fed as often as seven times a day, Dr. Keller reported.

The death rate at the hospital is very low, Dr. Keller said, and this is attributed largely to the food program which the hospital superintendent, Dr. John N. Thomas, has directed. Good physical condition leads to mental recovery in many cases, and hastens the recovery of others, Dr. Keller said.—Science Service.

THE DOCTOR'S LIBRARY

Offering Suggestions and Recommendations

RECENT ADVANCES IN DISEASES OF CHILDREN—Wilford J. Pearson, D.S.O., M.C., D.M., F.R.C.P., and W. G. Wyllie, M.D., M.R.C.P. London, with 18 plates and 32 text figures. 1928. 560 pages. Philadelphia. P. Blakiston's Son and company.

This is a very interesting little book on the subject. The contents are well arranged. Part I deals with a philosophy of disease. Part II takes up nutritional diseases. The third part deals with the different regions of the body. Worthy of comment is chapter XIX on x-rays and clinical diagnosis. The chapter alone is of particular excellence. The illustrations consist of fine reproductions of radiographs as well as detailed line drawings. The work is dedicated to the memory of William Harvey whose portrait forms the frontispiece of the book, the year 1928 being the 300th anniversary of Harvey's discovery of the circulation of the blood.

HUGHES PRACTICE OF MEDICINE—Including a section on Mental Diseases and one on Diseases of the Skin. Fourteenth edition. By R. J. E. Scott, M.A., B.C.L., M.D. New York ;Sixty-three illustrations. P. Blackiston's Son and company, Philadelphia, Pa.

This fourteenth revision has been very complete involving changes and additions to almost every section. The treatment has been conservative. While recognizing the importance of new procedures in both diagnosis and treatment, the author has not lost sight of the fact that many of these are still on trial and may never find their way into medical literature. Among the new features introduced are those referring to, Tularemia, Visceroptosis, Dementia Praecox, Avitaminoses, Rehfuss' Fractional Method of Gastric Analysis, Sippy's Treatment of Gastric Ulcer, Benedict's Test for Sugar, Graphic Methods in Cardiac Disease, Diabetes, Hay Fever, Asthma and Urticaria.

THE MEDICAL CLINICS OF NORTH AMERICA—July 1928; Chicago number; W. B. Saunders company, Philadelphia and London.

This volume contains thirty-one contributions from the leading clinicians of Chicago. Among the various subjects treated are: Phobias and Neurology of the Viscera by Dr. L. J. Pollock; Coronary Occlusion by Dr. Don C. Sutton; Diabetes, Late Results of Insulin Treatment by Dr. S. Strouse and B. Y. Glassberg; Eneurisis in Children by Joseph K. Calvin.

A TEXT-BOOK OF GENERAL BACTERIOLOGY—Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical college. Ninth edition, thoroughly revised. Octavo of 778 pages with 191 illustrations. Philadelphia and London: W. B. Saunders company, 1928.

Jordan's Bacteriology is too well known to the profession to need any lengthy introduction. When a book has passed through to the ninth edition it has not only demonstrated a demand but the fact alone means that it is fairly well known to the class of reader for whom it is intended. As the title implies this work is on general bacteriology which includes non-pathogenic as well as pathogenic forms. Likewise the subject of bacteria in the various arts and industries finds a place. The chief additions and revisions of this ninth edition consist in the rewriting of the chapter on Parasitic Protozoa. The writer has added new material on the bacteriology of scarlet fever, erysipelas and rheumatic fever, also new information on the bacteria tularense.

THE SURGICAL CLINICS OF NORTH AMERICA—June 1928; Chicago number; W. B. Saunders company, Philadelphia and London.

This volume contains twenty chapters on surgical subjects from the leading Chicago surgeons. The two volumes here mentioned cover fairly completely both medical and surgical methods as practised at the present time, so far as the subject's treated are concerned. Both are well illustrated.

PREVENTIVE MEDICINE—Mark F. Boyd, M.D., C.P.H., Member of Regular Field Staff, International Health Division of Rockefeller Foundation; formerly Professor of Bacteriology and Preventive Medicine in the Medical Department of the University of Texas. Third edition, Revised. Octavo volume of 475 pages with 151 illustrations. Philadelphia and London. W. B. Saunders company, 1928.

To quote from the preface: "The medical profession can play an important role in the field of preventive medicine and public health. At present physicians are neglecting these opportunities. If this neglect continues the opportunities will lessen and the field will be taken away from physicians by a changing public sentiment." This book deals with the subject in a clear concise way. There are extensive bibliographies at the end of the chapters for the student who would pursue the subject farther.

AN INTRODUCTION TO EXPERIMENTAL PHARMACOLOGY—Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica at Western Reserve University, Cleveland, and Paul J. Hanzlik, M.D., Professor of Pharmacology at Stanford University, San Francisco, Calif. Octavo volume of 321 pages, illustrated. Philadelphia and London. W. B. Saunders company, 1928.

This is essentially a text book on the subject of pharmacology and a complete laboratory guide.

William Wood & Company announce the issuance of the Tenth Revised Edition of Stedman's Practical Medical Dictionary, in flexible leather binding at a price of $7.50.

Books received for review are acknowledged promptly in this column; we assume no other obligation in return for the courtesy of those sending us the same. In many cases, review notes will be promptly published shortly after acknowledgment of receipt has been made in this column.

SYPHILIS CONSTANTLY INCREASING IN AMERICA

The American people are gradually becoming more and more "syphilized", reports Dr. Charles W. Burr, professor of mental diseases at the University of Pennsylvania, basing his opinion on his many years' experience with patients suffering from the end conditions of this disease. Change in the type of immigration during the last few generations and the letting down of social standards, particularly those which placed a bar between adolescent boys and girls, are the causes to which Dr. Burr attributes the increase. Immigrants from eastern Europe, where the disease is more prevalent, have brought it into this country in large numbers. Modern promiscuity, which has developed since the war, is playing a large part in the work of "syphilizing" the country.—Science Service.

FIND WAY TO REPAIR SEVERED KIDNEY DUCT

A successful way of repairing accidental breaks of the ureter or kidney duct has been announced by Warner S. Bump and S. M. Crower of the University of Illinois Medical School in a report to the Institute of Medicine of Chicago and the Society for Experimental Biology and Medicine of Chicago.

Often when a surgeon is performing a complicated operation around the kidney the delicate ureter is accidentally broken. Healing of such a break is accompanied by the formation of scar tissue which grows so that it eventually blocks the duct and makes that kidney useless. By means of rubber catheters, or tubes, the irritating fluid is diverted from the wound until it has had a chance to heal without scarring.

This method was first worked out on dogs, but has been used as an emergency measure on human beings with complete success.—Science Service.

PATHOLOGIC SLEEP

Walter Freeman, Journal A. M. A., discusses the question of a sleep center, pathologic sleep and narcolepsy. He concludes that sleep is the product of widespread cortical inhibition, probably the effect of some hypnotoxin that may be found in the blood and spinal fluid during states of prolonged wakefulness. In addition, there is a sleep center in the region of the floor of the third ventricle, which is acted on very powerfully by various chemical ions, as well as by inflammatory and neoplastic processes in the vicinity and by a generalized increased intracranial pressure. Prolonged sleep, arising precociously in the course of an intracranial disease, suggests the involvement of the infundibular area. Narcolepsy, sometimes associated with cataplectic attacks, may occur in the course of encephalitis or other malady, or it may be observed without known cause. The associated symptoms point to the tuber cinereum as the location of the disordered physiology, and focal lesions in this area have provoked symptomatic narcolepsy. Somnolence appearing in the course of suspected cerebral tumor is a signum mali ominis, for if it is prococious it points to an area that is difficult of access surgically and if it is late it indicates intracranial hypertension or a deep infiltrating growth. Somnolence is always symptomatic, whereas narcolepsy, although it may appear as the result of local organic disease, is often unaccompanied by any other disorder, and may present the criteria of an idiopathic disease. It is consistent with a fairly useful life, and does not incapacitate the individual. The treatment of somnolence is that of the provocative condition, and as a symptom it may be disregarded. Since narcolepsy may occur without known cause, treatment can only be symptomatic and the condition may prove very rebellious to any treatment. Potent glandular extracts are suggested as the least unpromising.

MANAGEMENT OF TARSAL AND METATARSAL FRACTURES

John D. Ellis and John S. Coulter, Journal A. M. A., assert that the combined treatment of early reduction and proper splinting, with extension, physical therapy and elimination of focal infections and sources of toxanemia, will reduce the temporary and permanent disabilities of these fractures. The sinusoidal current for muscle stimulating has a definite place in the after-treatment of these injuries as a preliminary to voluntary exercise. It is often extremely difficult to develop the weakened invertors and the small muscles of the foot by voluntary exercises alone, especially in patients with atrophy of the disuse after long immobilization. Manipulation of any stiffened joints of the foot under an anesthetic is almost invariably a mistake. Generally within a week following this treatment such joints are stiffer than before or, if still movable, remain far too painful for function. This is particularly true in those injuries which have shown a "hyperplastic reaction."

EYE INJURIES BY AIR GUNS AND SLING SHOTS

In three cases of injury to the eyeball, reported on by Frank H. Rodin and Albert B. McKee, (Journal A. M. A.), two were caused by BB shot with a foreign body in the orbit, and the third by a sling shot causing a traumatic cataract and iridodialysis. The presence of the foreign body in the orbit was diagnosed by the roentgen ray. In one case the foreign body was spontaneously extruded sixteen days after the injury; in the other case the foreign body has been in the orbit for two months with no reaction on the part of the eye. A roentgenogram should be taken of all injuries to the eye by shots. The indiscriminate use of air guns and sling shots by children should be discouraged.

RAPID METHOD FOR REMOVAL OF PLASTER-OF-PARIS CASTS

David H. Snelling and Morris D. Cohen, (Journal A. M. A.), describe a rapid method for the removal of plaster-of-paris casts. With an ordinary cast knife, a superficial cut is made on the cast as a marker. A 25 per cent solution of sodium of potassium citrate is dropped from a dropping bottle along the outlined pattern. The cast is softened at once and is then cut with an ordinary scalpel or cast knife. The avantages of this method are: 1. The ease and rapidity with which a cast may be removed. 2. The elimination of elaborate cast-cutting instruments. 3. The ease and rapidity with which fenestras of any size or shape may be cut. 4. Its inexpensiveness. 5. The absence of chemical injury to patients or instruments.